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THE COVER

Our cover for The American Engineer this issue shows one of nature's engineering masterpieces—the Natural Bridge of Virginia, which is so familiar and which has afforded so much pleasure to tourists.

Engineers, seeking a pleasant week or two weeks' vacation this summer, might motor to the Virginia Skyline Drive beginning in the familiar Shenandoah Valley south of Winchester, then following on down the Valley, enjoy the scenery in the vicinity of this Natural Bridge, and see the bridge itself.

The American Engineer assumes no responsibility for statements or opinions expressed by contributors. Their names identify the source of the same.

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EDITORIAL • • •

PATENTS AND THE ENGINEER

The Engineer is vitally concerned with protection to the inventor, toward the end that inventors be adequately compensated for their initiative, research and ingenuity, and toward the end that such inventions be encouraged.

A fundamental trait of the American people has been their inventive genius, which has enabled them to forge ahead in agriculture and industry and maintain their world position in the face of the cheapest types of labor employed by some foreign nations.

Also, as we are a professional society devoted to the advancement of the economic and social welfare of our members, our chief opportunity lies in the field of promoting legislation which is of benefit to those members. In fact, our national officers devote much of their time toward aiding legislation at Washington and in the states, and toward helping the states with their individual problems of new legislation.

Our national legislative committee chairman, who combines the professional qualifications and titles of both Engineer and Attorney, labors constantly in adding new beneficial legislation, in purifying existing legislation, and in saying "NO" to many proposals which are not soundly conceived.

In our previous issue's Editoral we directed attention to bills in the National Congress pertaining to public works authorities. This month we want to call your attention to legislation proposing amendment to the present Patent Litigation Act of March 3, 1911 (U. S. C., title 28, sec. 109).

H. R. 6471 was introduced to the National Congress May 23, 1939, at the request of the Patent Committee of the New York State Society of Professional Engineers Inc. and was referred to the House of Representatives Committee on Patents. This is a non-controversial bill, and its purpose is to simplify and clarify court jurisdiction for patent litigation.

The New York Patent Committee states:

"The existing laws are easily used by the unscrupulous to defeat the ends of justice, and this bill corrects this unhealthy condition."

If this be true, we direct your attention to this new bill—H. R. 6471—for your own individual study and endorsement.

We have in our ranks many chemical engineers who are constantly developing new products. The trend of invention has been by great corporations establishing research laboratories in their own fold.

If we can help the individual engineer to protect his rights in the patent field, let us heartily do so!

ROBERT HALL CRAIG
Editor

Governor Herbert R. O'Conor Signs Maryland Professional Engineers' Registration Law in Presence of Engineers May 27, 1939

By W. S. CONLON

Front row, left to right: C. A. Shaab, Clerk of Senate; Hon. A. Brice, President of Senate; Governor Herbert R. O'Conor; Hon. Thomas E. Conlon, Speaker of the House of Delegates; J. Nowakowski, Clerk of the House.

Back row, left to right: Prof. R. B. Allen and F. W. Gast, Secretary and President, respectively, Maryland Society of Professional Engineers; M. E. Killough and E. J. Dougherty, Chairman Registration Committee and President, respectively, of Maryland section, American Society Civil Engineers; W. S. Conlon, Executive Secretary, N. S. P. E. and Chairman, Legislative Committee, Maryland Society Professional Engineers.

The enactment of the 41st State Registration Law for Professional Engineers is evidenced by the above photograph recording Governor Herbert R. O'Conor of the State of Maryland and the President of the Senate as well as the Speaker of the House of Delegates signing Chapter 752 for Registration of Professional Engineers and Land Surveyors, in the presence of a delegation of Maryland Engineers.

Senator John B. Funk, City Engineer of Brunswick, Maryland, sponsored and introduced the bill on behalf of a group of Maryland engineers consisting of the Maryland Society of Professional Engineers; Maryland Chapter, American Society of Civil Engineers; and the Engineers' Club of Prince Georges and Montgomery Counties as well as the American Institute of Chemical Engineers of Baltimore.

Following the successful passage of the bill by both the Senate and the House, additional opposition to the bill was recorded by a group representing Industry, whose opposition apparently was not in evidence during the hearings held by the Legislature.

These opponents petitioned the Governor to veto the bill; however, the Governor although having the power to approve or disapprove this legislation without holding additional hearings, granted an open hearing to the opponents to which he invited the proponents. All who were present could not help but be signally impressed with the tolerance, good sportsmanship, and the democratic manner in which these proceedings were held. Here was a beautiful demonstration of democracy operating at its peak of performance.

Of equal significance was the great number of engineers who responded to the Governor's invitation to be present at this hearing at Annapolis, as it indicated an aroused social consciousness on the part of engineers which gives promise of an accelerating interest in the affairs of state which can but redound to the great benefit of the public welfare as well as the profession.

The enactment of this legislation is a challenge to the engineering profession in the State of Maryland to give evidence of its sincerity of purpose in cooperating with the State Board in such a manner as to win the confidence of its former opponents so that as time indicates the desirability of amendments to this legislation to the further interests of the public welfare such changes will be advanced with the wholehearted support of all who are interested in better serving the State.

Further acknowledgment is due to the Speaker of the House of Delegates, Thomas E. Conlon, for his valuable assistance to the Professional Engineers throughout the course of the enactment of this legislation; as well as to Delegate John S. White, Chairman of the Committee on Ways and Means, and Senator Dudley E. Roe, Chairman of the Finance Committee; Delegates J. W. Gill and J. D. Buscher of Montgomery County; also to Engineers M. E. Killough and G. J. Requardt, Chairman and member, respectively, of the Registration Committee, Am.S.C.E.; Engineer Edward James Dougherty, President, Maryland Section, Am.S.C.E.; and the many others who were sympathetic to the advancement of this project.

The Relation of Engineers and Architects to Current Problems

Address Given at the Annual Meeting of the New York State Society of Professional Engineers, Commodore Hotel, New York City, May 27, 1939

By N. MAX DUNNING, Asst. Chief of Procurement Division, U. S. Treasury Department

A good deal of thought is being focused on "The World of Tomorrow," particularly in New York City, at the present time because of the general theme of the New York World's Fair of 1939.

In any contemplation of the world of tomorrow, and what it may hold for our citizens, the professional engineer, the architect and other men professionally trained in the many specialized fields of construction stand in a position of greater responsibility than they have possibly ever stood before. They are faced with many problems crying for solution that are at once a challenge, an opportunity and a responsibility.

It is quite generally conceded, I believe, by economists and business men that until the construction industry is revived on a healthy basis there can be no stable recovery in business as a whole and it seems apparent that in the effort to stimulate this recovery the impetus that may be applied by the cultivated imagination of the technically trained professional man, through the development of new methods, materials, equipment and construction techniques, should be one of the most effective motivating forces to bring it about.

In a recent discussion of the great problem of unemployment before congress the following statement, that I believe to be true, appears in the record, "statistics tell us that construction has been the greatest single employment force. It is the nation's greatest single capital investment. It is one of the greatest forces toward diminishing unemployment and elevating living standards and conditions of our citizens."

Further than this, in my opinion, employment in construction has the broadest geographical spread going back as it does to the forests, the mines, the clay pits, through the manufacturing industries, all facilities of transportation, and finally to the labor at the site.

It has been truthfully said that there no longer exist, as in the past, *geographical frontiers* offering to the "pioneers" of today the great opportunities that once existed for vast developments to meet the demands of a then rapidly increasing population.

There are, however, *no limits* to the *frontiers* that still exist in the fields of technology and science. In the expansion of these frontiers lie undreamed of opportunities that challenge the imagination and embrace the greatest possibilities of making the "world of tomorrow" a better world in which to live.

It is a hopeful sign that great progress is being made, day by day, in the evolution of the technology of construction.

The laboratories of industry, during the long period of the depression, have worked at an accelerated pace in the development of new building materials, methods and techniques embracing chemistry and all the related engineering sciences.

When we see synthetic glass, said to be more transparent than ordinary glass, made from chips and sawdust; silklike fabrics spun from the same material and beautifully modeled plastics made from skim milk, we realize the drama of technology and science and some of the directions research is taking.

As industry has been mechanized to a greater and greater extent, the effect has been to decrease production costs, make possible increases in wages and bring within the reach of a greater and greater number of people commodities that make for greater comfort and higher standards of living and at the same time ultimately increase employment through the creation of broadened demand and greater purchasing power.

I need not mention to you gentlemen the dramatic history of the automobile with the concurrent development of roads; the increased use of oil and gas; the service station; the wayside inn; and the effect of the automobile on our urban and rural communities and the future planning of our cities.

In the field of construction, which of course is the subject in which I am most interested, there are available today countless new products which have been developed that have reduced costs and have made possible greater efficiency in planning and greater opportunity for achieving artistic quality in the design of buildings falling within the cost range of the simplest structures. There is an immeasurable field of opportunity in this direction that still remains to be explored.

I have often made the remark, and I call it to your attention for observance, that in many of the modern shop fronts and cocktail bars that one sees today, there is hardly a material used that was on the market at the end of the world war. Plastic materials of great serviceability and beauty have been produced; structural glass; sculptured glass; plywoods; wallboards; extruded metals; enamels; decorative acoustical tile; fiberboards and a variety of floor coverings that have been accepted for use and that you are as familiar with as I.

Definitely in the field of engineering there have been equally important developments, making for economy in construction durability and comfort.

I am thinking particularly of labor-saving and sight-saving devices in the electrical field; in heating equipment with various automatic controls; of air-conditioning and ventilation; of progress in structural engineering; weldings; foundation work, forming; scaffolding; hoists; and provisions for the greater safety of workmen. The day of "one man killed for every story of a skyscraper" is long past.

The great modern building particularly the office building, hotel or apartment of today has become so complex that its design and engineering problems require intimate and sympathetic collaboration between the architect and many engineers of specialized training in elevators, escalators, air-conditioning, acoustics, and a multiplication

of electrical installations for the many uses that have now become accepted as necessary for comfort in living and the transaction of business.

It has been said, and I don't quest on the statement, that in the modern skyscraper of not unusual size there are used today more tons of copper in the electrical installations alone than would have been found in the average city of 50,000 inhabitants fifty years ago when even electric lighting of buildings was in its infancy and when no architect would dare install anything but a combination gas and electric fixture because of the very reasonable fear that the powerhouse would break down.

Very great progress has been made and it is reasonable to expect that just as great progress will be made, and probably in an accelerated tempo, in the future.

By a continuation of such progress, in the important construction industry, I believe many of our social and economic problems will approach nearer to a solution. We engineers and architects are living in an age of great opportunity.

Just as a sidelight on what is taking place and to indicate a trend, I am reliably informed that the high-speed. streamlined train, the "zephyr" on the Burlington railroad out of Chicago weighs less than half of what the equipment of the conventional train of the same passenger capacity would weigh; also that freight cars of equal capacity and half the weight of the older type are being produced and coming into greater and greater use.

The engineers and architects might well direct their thought, skill and imagination to the effect of weight on the cost of structures, keeping in mind that the completed building is an assembly of many elements coming frequently from long distances and that freight rates are an important element of cost; that manpower and mechanical power to hoist, handle, and erect in place materials is important and that in foundations and structural support weight has a very definite relationship to cost.

Reduction in cost of construction without sacrifice of durability or appearance is one of the major problems of the future that it seems to me is a responsibility to assist in solving.

It has been stated in relation to residential construction that for every $500 reduction in the cost of a house the potential market of purchasers is increased by one million.

It may be consistent with the theme of my address to dwell briefly on the subject of housing.

At the present moment housing for the lower income groups, and housing in general, is much in the spotlight of public attention, and very properly so. Because of its social and economic implications, housing is believed by many, and I am one of them, not only to present the greatest need at the moment in the field of construction but also to present the most tangible point of attack in a nationwide effort to stimulate construction and increase employment. It is, therefore, to be expected that emphasis should be placed today on research, experimentation and investigation of materials and construction methods appropriate to housing.

I happen to be a member of the central housing committee in Washington and chairman of its ways and means committee. The central committee is made up of the principals of the various agencies interested directly, or indirectly, in the government's activity in the financing of housing and the insurance of housing loans. Because of the new lending policies involving long periods of amortization of loans it becomes a matter of major importance that the materials and construction methods used in housing projects should combine as far as possible reasonable cost, durability of construction and possibilities of attractive appearance.

The central housing committee were somewhat instrumental in securing an appropriation from congress for a three-year program of research and tests by the national bureau of standards. An appropriation was also made to the forest products laboratory for research in the uses of wood. While this program is primarily directed to materials and equipment appropriate for low cost housing a very large proportion of the results will be equally applicable to other types of building.

The general scope thus far has included tests of various types of floor construction; wall units; thermal insulation; roofing; floor coverings applied to concrete; heating; plumbing; infiltration; building papers and boards; sound insulation; plywoods; the chemical seasoning and fireproofing of wood, etc., only to name a very few of the construction elements that have been, or are being, tested.

Never before have there been such large sums expended in the laboratories of industry, colleges, universities, research organizations and by private enterprise in the development of new materials, methods and techniques in building. Colonel Lindbergh is reported to have recently stated before a congressional committee that "the government should appropriate larger sums for research in aeronautical engineering." I believe it would be equally desirable for larger sums to be made available by the government for research in the field of construction because of its great importance in the national economy.

Now what do all of these activities directed toward contributing our part as professional men and adapting ourselves to changing political, economic, and social conditions mean. To me as an architect it means that the architect can no longer be a man who secludes himself in cloistered study to dream his dreams. He must be a man alive to the changing conditions of his time and must interest himself in contacts with those other specialists in the field of engineering, in the production of materials; in the construction of buildings and with all of the other interests with whom he must collaborate. He must be course stick to his colors as an artist but must apply his artistry to the practical uses of all of the new materials, methods and devices that are now available and that the building of tomorrow will demand.

I believe that one of the most important steps the American Institute of Architects ever took was the establishment of a formal affiliation with the producers council through the structural service department of the institute seventeen years ago.

At that time the architect and the producer couldn't speak the same language; neither understood nor tried to understand the other's problems and limitations; advertising directed to the architect and engineer was generally self-laudatory and non-informative and the average manufacturers representative was a high-pressure salesman whose principal equipment was pleasing appearance, cigars, and an entertainment fund.

Today the producers council is made up of a membership of principals of 66 of the largest manufacturers and associations of manufacturers producing quality materials with producer council clubs in 24 cities of the United States where chapters of the institute are located. The architects, often the engineers, and the producers hold joint meetings and discuss common problems. Today the advertising material issued is technical in character and generally gives the information an architect or engineer should have to specify a given material for its appropriate use. It carries a filing symbol and is printed on sheets of uniform size. Today the representatives of the producers are almost uni-

versally trained technical men capable of giving, and generally willing to give, disinterested advice in the solution of many problems.

We have traveled a long way since 1922 but we still have a long way to go.

I have probably already talked too long and worn out my welcome, but I have wanted to take advantage of this important occasion to paint a little picture of what has been done and is being done by technology trained men, to indicate in a small degree the road of opportunity that lies immediately ahead.

Before closing, however, I want to suggest one more field of endeavor, in which we are all interested as professional men, that is possibly the most important of all. This would seem to me to be to combat with all the persuasion at our command as professional advisors the tendency toward building sub-standard buildings at the insistence of owners and often bankers to secure low first costs. We should direct our best efforts to encourage quality construction and attempt to secure reductions in cost by technological improvements in construction methods and materials, thus reducing the terrific write-offs in value and earning power due to the use of inferior materials, shoddy construction and bad planning.

It would seem to be worth the time and intelligently directed effort of the engineer, the architect, the real estate interests and the taxpayer to concern themselves with the quality of buildings. The rapid obsolescence of a building, or a few buildings, in a given neighborhood is bound to accelerate the deterioration of the entire neighborhood until it progressively becomes a "blighted area." Thus destroying the income value of the physical improvements and the taxpaying ability of the owners and investors in the neighborhood. We have seen demonstrations of this in every large city in the United States, where the growth of the city has jumped over entire areas that have gone into physical decay.

The shrinkage in values from such causes was one of the major reasons for the holocaust of foreclosures that attended the financial debacle of 1931 to 1933.

An important joint effort on a nation wide basis is soon to be undertaken between the American Institute of Architects, the Producers Council, and the Federal Home Loan Bank Board to protect the small home purchaser and improve the security behind the loan by making available at moderate cost designs of well planned and durably constructed houses—with mandatory supervision and with a certificate of compliance as to quality that will lend an asset value to the property in case of resale or refinancing.

We anticipate this effort will help to restore confidence in home ownership and stimulate construction.

And now, at long last, I want to expand a little on what I only touched upon at the beginning of my talk—the importance in this vital period of reconstruction of the professional man. The man who has nothing to sell but service, service based on natural ability, years of training and experience. The man who achieves his success and reputation and his share of wordly goods by the quality and adequacy of the service he renders to his collective client, the public, and almost equally important, the service he renders to the profession to which he belongs.

I am a great believer in professional organizations that have a vital purpose and I am deeply sensible to the great influence they have exerted in molding public opinion, in advancing the standards of technical education; the importance of culture and an appreciation of the arts.

There are many objectives that can only be attained by organized effort. There are many problems of policy and relationship between a professional man and his professional brother that can only be determined in a forum of joint discussion. It is necessary that there be developed and observed certain codes of ethics; rules of conduct and principles of honorable practice. There must be centered in an organization power to enforce certain disciplinary powers, because the derelictions of one man may cast a stigma, in the public eye, on an entire profession. Minimum schedules of compensation must be developed unselfishly and in the public interest in order that professional fees shall be adequate to permit the professional man to render the quality and extent of service that is necessary to protect the best interests of his client, together with a reasonable profit. There are also external relationships where only the voice of an organization will be effective. In such matters as legislation, codes, ordinances, etc., all of these things and many more, that of course it is not necessary for me even to mention to you gentlemen, call for organized effort. There should also be the fullest cooperation between one professional organization and others with related interests, the most friendly relationship should prevail. Just as the individual cannot stand alone, it is often true that in the attainment of major objectives one organization cannot stand alone. In the measure that there is cooperation and teamwork between organizations related by common objectives or interested in professionalism in the abstract so in that measure will these objectives be attained.

All in all we are probably living in the most dynamic period of all history and the period of greatest potential opportunity. If we sieze our opportunity intelligently and apply the specialized knowledge and the cultivated imagination, that is the engineers and the architects, to some of the great problems that face us today, we will I am sure, have made a great contribution to social and economic progress and in our own behalf will have helped to establish the value of professional service in the high position among the learned professions to which we as engineers and architects belong.

Telephone Company Cooperates

Splendid progress has been recorded by the New Jersey Society of Professional Engineers in eliminating unlicensed listings as "Engineers" from the telephone directory, and the cooperation of the Telephone Company has been secured.

This accomplishment is due to the initiative of Engr. William G. Christy, Vice President of the Hudson County Chapter and Chairman of the Ethics and Professional Practice Committee. He inaugurated a campaign to investigate all business concerns and individuals advertising themselves as engineers. Communications were addressed to all concerns advertising in the telephone directory under the caption "Engineers" and they were asked to supply the committee with the name and registration number of the member of the company licensed as an engineer. Unsatisfactory replies from ten firms and three individuals were reported to the State Board of Professional Engineers for further investigation and possible prosecution. The State Board is cooperating and has assigned a Special Representative of the Board to these investigations. The Telephone Company is also cooperating in stopping such unlicensed listings, and most of the firms and individuals reported have agreed to drop the designations "Engineer" or "Engineering." The cooperative spirit of the Telephone Company is due in part to the fact that in the last three or four years practically all of their Engineers and Engineer-Executives have become licensed to practice in the state.

The Professional Responsibilities of The Engineer

By Matthew O. Troy, Vice-President of the General Electric Company

(An address presented in Albany recently at the midwinter meeting of the New York State Society of Professional Engineers)

In the fog and haze of the unsettled business conditions which have confronted us intermittently, if not continuously, over the last nine-year period, I think all of us at times have felt a nervous apprehension which crowded out progressive thinking. When I am in such a mood, I like to recall the helpful philosophy of William Allen White, the 71 year old editor of the *Emporia Gazette,* at Emporia, Kansas, who, in concluding his 70th birthday message, observed—(Quote)

"Life today has been broadened and pleasured by the pioneers of yesterday even as life yesterday was opened to new vistas by the young folks who climbed out of the covered wagons and built the new land. I am not afraid of tomorrow, for I have seen yesterday and I love today." (End of quotation.)

Mr. White has seen yesterday's problems solved and is glad to live in the world of today—a world of all-electric homes, rapid transportation, and greater health.

What is responsible for these?

Who made possible electric power, the airplane, radio, modern refrigerators, automobiles, and the vast mechanical power which is responsible for our modern high standard of living.

The Engineer!

He has developed the power and the power-driven machinery that have created our present well-being. Our very lives and social customs have been altered. The isolation of farms has been broken down through the development of telephones, radio, and automobiles. Business transactions have been speeded up and their spheres widened.

Engineering achievements have made available to us in the United States 1⅓ billion of mechanical horsepower, which in 1936 was distributed approximately in the following manner:

Automobiles, busses, trucks, and motorcycles	1,000,000,000
Locomotives	88,000,000
Agricultural prime movers	73,000,000
Electric central stations	46,500,000
Marine	30,000,000
Industrial power plants	20,150,000
Airplanes	3,500,000
Mines and quarries	2,750,000
Electric railway plants	2,500,000
Isolated non-industrial plants	1,500,000
Total horsepower	1,267,900,000

Power in American industry, about one half of which is purchased from electric central stations has been increased over three hundred per cent during the last thirty years. During the same period, the volume of production has doubled, and wages have increased fourfold. By increasing the amount that each worker can produce, the power-driven machine has made possible a great increase in the reward for work. More power-driven machinery has made it possible for the average American worker to earn at present nearly twice the weekly wages he received in 1914, while his average working week was reduced about twenty-five per cent during the same period.

The engineer has created whole new fields of work, such as the automotive, motion picture, aviation, electric power, and chemical industries.

Just as the railroads caused cities to spring up all over the country, the automobile has thrown the population of cities out into the suburbs and widened trading areas for millions of our inhabitants. It has been said that the automotive engineer through the development of the automobile has exerted a greater influence than Caesar, Napoleon, or Genghis Khan.

The moving picture has brought entertainment that is available to every workman and his family. It has also opened up new agencies of education and propaganda with far-reaching effects.

Modern airplanes have eliminated distance and increased international contacts. They are changing the whole balance of power, as evidenced by the current race of nations in building bombers and war planes.

The electric power industry has affected all phases of our material existence. It has multiplied the uses of mechanical power. With our present knowledge it is ordinarily not practical to transmit electric energy for distances much greater than two hundred miles. With present Mid-Western freight rates, it is cheaper to haul coal nine hundred miles to the point of power production than it is to transmit power electrically two hundred miles. Furthermore, coal can be stored at the place of use while electric energy cannot. There is need for much research in the field of electric power transmission. It must be realized that power plants located at the mouth of mines are practicable only in rare instances, since modern steam electric power stations of 300,000 KW of capacity use as much water for condensing steam as do cities of about two million inhabitants.

Let us examine our abundant power resources. The principal sources of energy for power production are fuels and water falls. Enormous fuel reserves are available in this country. Coal is found in mineable quantities in thirty-one states. Our coal reserves of 3½ trillion tons are adequate for centuries to come, even if we continue to rely mainly upon coal burning plants for power. Our resources of petroleum are limited and should be reserved for use in airplanes, motor vehicles, motor ships, and the lubrication of machinery. Natural gas is also a fuel which should be conserved.

The chemical engineer, with his development of rayon, plastics, and other synthetic material, constantly affects our daily lives.

Would not a man of ancient times be certain that he was in the land of Arabian Nights if he could see factories in the United States turning wooden boxes into silk stockings, or obtaining from a lump of coal colors more beautiful than royal purple, and perfumes more delicate than attar of roses.

These facts impress upon us the wonderful job done by the engineers of the past and our great debt to them. But, also, we must not lose sight of the tremendous power which these achievements have given the engineer. He has

control of forces which alter our very lives and customs. Certainly, with this power, goes a great responsibility. Society depends upon the engineer to utilize his power in that manner which will bring the greatest benefits to all the people of this country. How can he best render this service?

One of the outstanding problems before us is unemployment. New industries are needed to absorb the many now out of work. New industries are created by the engineer—and new industries mean more work. We no longer have frontiers in the West. Today our frontiers are in science. Our hope is in the engineer.

It is often said that modern technological advancement is responsible for unemployment since power machinery has displaced men. A few years ago there was a craze known as technocracy which was based on this belief. The history of employment during the last forty years refutes this theory. It shows that the engineer through new industries has increased factory jobs faster than our population increased, and that the total wages paid in 1937 were more than four times that paid in 1899.

What we need is more technical advancement. More new industries which will give increased employment. At the same time it must be recognized that the engineer has a definite responsibility in lessening the turbulence during periods of necessary readjustment, which technical improvements often cause in industry.

All of this means more opportunities for the engineer. In the past people were reluctant to take advantage of new improvements. This condition has changed. The engineer is no longer faced with the same obstacles of criticism and skepticism which prevailed in the past. You are all familiar with the derision given Robert Fulton for his steamboat and Stephenson for the locomotive. Even in 1900, a newspaper commended Theodore Roosevelt for his "characteristic courage" when he first rode in an automobile. Right here in Albany, on March 11, 1812, just 127 years ago today, Mr. Robert R. Livingston, one of the great statesmen of New York State, wrote the following letter to John Stevens to prove the advantage of canal navigation over railroads. (Quote)

"* * * I had before heard your very ingenious propositions as to the railway communication. I fear, however, on mature reflection, that they will be liable to serious objections, and ultimately more expensive than a canal. They must be double, so as to prevent the danger of two such heavy bodies meeting. The walls on which they are placed must at least be four feet below the surface, and three above, and must be clamped with iron, and even then would hardly sustain so heavy a weight as you propose moving at the rate of four miles an hour on wheels. As to wood, it would not last a week; they must be covered with iron, and that, too, very thick and strong. The means of stopping these heavy carriages without a great shock, and of preventing them from running upon each other (for there would be many on the road at once) would be very difficult. In case of accidental stops, or the necessary stops to take wood and water, etc., many accidents would happen. The carriage of condensed water would be very troublesome. Upon the whole, I fear the expense would be much greater than that of canals, without being so convenient." (End of quote.)

Now, however, people are looking for new and better things. Things that will aid them in their everyday lives. They are asking for them—and there is a ready acceptance as soon as they are perfected. Television will illustrate the point I have in mind. In making these developments the engineer now has better methods under his control. He has a great variety of materials, machinery, and knowledge, not known to the engineers of the past.

Patents granted annually in the United States are rapidly increasing in number. The number of patents issued every 10 years since 1880 is: 218,000, 235,000, 334,000, 401,000, and 442,000. Thus twice as many patents were issued in the decade ended in 1930 as were issued from 1880 to 1890. In the past there has been considerable time lag between the patent or conception of the invention and the ultimate utilization by our people. The telephone patent was granted to Bell in 1876 yet only one million were in use by 1900. The Wright Brothers secured an airplane patent in 1906; but think of the many people even today who have not ridden in an airplane. Hence, many new inventions now in the embryonic stage will shape our destiny for years to come. So we look forward to the future with confidence—and, especially, is the opportunity and outlook bright for the engineer. The Engineer has become a major factor in our modern civilization.

Notwithstanding the many outstanding accomplishments of the past, there is no indication that the job is finished, or that it will be completed in the lifetime of anyone in this audience. This thought is so clearly expressed by Dr. Willis R. Whitney, from whom I quote.

(Quote)

"I would not dare to say what I think electricity may do in the future. We are always making the mistake of supposing we have exhausted our knowledge in any direction. Discoveries and inventions are not terminals. They are fresh starting points from which we can soar to new knowledge."

SECRETARY POOL OF RHODE ISLAND SOCIETY APPOINTED TO REGISTRATION BOARD

CHARLES LUNDY POOL
Photo By Bachrach

Engineer Charles Lundy Pool, Secretary of the Rhode Island Society of Professional Engineers Inc., has been recently appointed for a five year term as Member of the Rhode Island State Board of Registration for Professional Engineers and Land Surveyors.

The appointment was made by Governor William H. Vanderbilt. This gives the Rhode Island Society of Professional Engineers four places out of five on the board, as follows: John E. Meade, President, R.I.S.P.E; Joseph D. Guillemette and Philip S. Mancini, Directors, the fifth member being Prof. Leighton T. Bohl, of Brown University.

The Profession of Engineering

An Address by Milton E. Loomis, Associate Commissioner for Higher Education in the State of New York, Presented at a Recent Meeting of Zone 5, New York State Society of Professional Engineers, Inc., in Troy, New York

That the practicing engineer is a member of a profession, no one in this audience would be inclined to deny. It seems worthwhile to inquire what the distinguishing features of a profession are, how the practice of engineering came to acquire this status, and what effect such status has upon the relationships between the members of the engineering profession and the public.

What is a profession? The dictionary defines the word "profession" as follows: "The occupation, if not commercial, mechanical, agricultural, or the like, to which one devotes oneself; a calling, as the profession of arms or teaching." I cite this definition not because it is particularly helpful, but because, on the contrary, it reveals that the lexicographer is as confused as the rest of us as to what the word really means. He tries to set the professional practitioner apart from him who engages in the pursuits of commerce, mechanics, agriculture, "or the like." Well, what makes commerce, mechanics, or agriculture different from a profession, and to what other pursuits are those just mentioned similar? How can concepts which are fundamentally dissimilar from each other be, as a group, similar to anything else? To consider engineering specifically, how does the engineer differ from the man of business or commerce? Is it not often said that the successful engineer must be a good business man? Indeed is it not often said that the most successful business man is likely to be an engineer? To be sure, the engineer deals in the stuff of science, with proved and tested data, while the business man may rely upon hunches and hopes. The engineer knows that two plus two equal four, and the business man, most of the time, is mastered either by the ecstatic conviction that the answer is five, or by the depressing certainty that it is three. But if the use of scientific data is the touchstone of the profession, what is the difference between the engineer who builds a dam which impounds the water to make the desert fertile and the agriculturist, who, using tested knowledge of soils and of the needs and habits of plants, causes the fertile desert to yield life-giving crops? Is the difference that, in the fields of commerce or agriculture, men labor for uncertain and indefinite gain, while in the professions men labor for a fixed and known compensation? If that be so, then the factory worker or the hired hand on the farm is a professional man.

No, the definition of the dictionary simply does not define. The legislators have not been conspicuously more successful. The legislature of the State of New York defines a professional engineer in the following words: "A person practices professional engineering, within the meaning and intent of this article, who holds himself out as able to perform, or who does perform any professional service, such as consultation, investigation, evaluation, planning, design, or responsible supervision of construction or operation, in connection with any public or private utilities, structures, buildings, machines, equipment, processes, works, or projects wherein the safeguarding of life, health or property is concerned or involved, *when such professional service requires the application of engineering principles and data.*" I have stressed the last clause of this definition, because, read with all the rest, it simply means that a person is practicing professional engineering when he is practicing professional engineering. The definition in one sense is appropriate to the field to which it relates—it is a perfect circle. It is possible that the infirmity of this definition bears some practical relationship to the difficulties which beset the law enforcing agencies of the state when they consider the problem of restricting the illegal practice of engineering.

And now, having been destructively critical, I will venture upon a definition of my own, well knowing that it will be open to similar vicious attack. A profession is a calling for the practice of which there is a clearly recognized public need, and which demands of its practitioners a peculiar competence, based upon specialized knowledges and skills, to be acquired only by unusual, and unusually arduous, study or experience or both. That this definition is not wholly original is evidenced by the statement of Doctor Graves, the Commissioner of Education, in his book, *The Administration of American Education.* He says:

"Theoretically, a profession, as distinct from a business, places service to society above mere money-making. It recognizes that the scientific knowledge and corresponding skill upon which it is based are an inheritance won by the labors and struggles of humanity through the ages, and that, while professional men are temporarily trustees of that knowledge and skill, the possession really belongs to society as a whole and should not be altogether prostituted to private gain. The welfare of the community, state, and nation is dependent upon the service rendered by the profession, and professional men should feel under moral obligations to the community and each other to execute this service properly."

In this sense, the professions are a product of the modern era. They grow out not only from our recent mastery of science, but from the recognition of the public that the sciences can and must be applied to the promotion of the public welfare. As the people as a whole have become more and more dependent in their daily lives upon the specialized technical services made possible by the advancement of science, the professions have multiplied. Not only do new professions enter upon the stage, but older ones undergo the sometimes painful process of multiplication by division.

This proliferation of the professions is likely to have important social consequences. As a legacy from our primeval ancestors, we have inherited a special veneration for him who is an accepted member of a profession. It is not hard to see why this should be. The two aboriginal professional practitioners, the soldier and the priest, were indispensable to the existence of the community as a social group. The priests of savage tribes were in a particularly strong position, for while on occasion every one might have to engage in the trade of war, the gods could always be adequately served by a chosen few. Those few protected themselves by evolving and elaborating esoteric mysteries to be revealed only to the initiated, after long and laborious novitiate. The ingorance of the mass was the protection of the few. The few, thus set apart, naturally acquired preferred social status, and not infrequently preferred economic status as well. The situation has not greatly changed with the passing of the centuries. The urge to acquire professional status has always been and still is a powerful social force. There are thousands of devoetd fathers and mothers here in the State of New York today who are depriving themselves of the necessities of living in order that their sons may have the time and money to prepare themselves for admission to one or another of the professions. You may extol as you will the merits of honest, non-professional toil, but as long as the glamor of the profession dazzles the eyes of the mass of the people, you will exhort in vain. Our educational institutions have been profoundly influenced by the popular appeal of the professions, and even the strongest of our non-professional colleges have been re-molded, some would say distorted, by the demands of professional education.

But if the public need for specialized, professional service continues to expand into new areas, the time may not be far off when most of the people will be engaged in rendering professional services to one another. Then many of the advantages of a preferred category will be lost. The members of existing and established professions may them be called upon to appraise the social advantages and disadvantages of this trend. Of course, the prospect may be viewed either pessimistically or optimistically.

The pessimist may hold to the view that the widening of the professional range will drag the members of the older professions down into the dead level of the common run. Such an attitude is likely to arouse fear, and fear may be the urge toward elaborate and exaggerated defenses. There is always the possibility that the profession may become a guild and the guild a caste. I know that every clear-thinking member of every profession would deplore such a development, realizing that thus the profession, in attempting to protect itself, would destroy itself. If anything is to be learned from the experience of the world during the past decade, it is that the vitality of the professional spirit can be preserved only in an atmosphere of social liberty, with the fullest opportunity for freedom of choice. We do not need to speculate as to what would happen to the professions under regimentation and indoctrination. They are seen to wither before our eyes. We should exercise caution even in seeking protective legislation. It should be resorted to only in the interest of the public, and then only to the extent of clear necessity. Neither the creation nor the survival of a profession should depend alone upon the law.

But a more cheerful view is possible. We can assume that the

(Continued on page 24)

New York State Society of Professional Engineers, Inc. Has 12th Annual Convention in New York City

OFFICERS

1938-39

President.....ALFRED E. ROCHE
1st Vice-President.....FREDERICK H. ZURMUHLEN
2nd Vice-President.....ANDREW K. JOHNSON
Financial Secretary.....ERNEST F. FOX
Treasurer.....PATRICK M. CORRY
Historian.....RAPHAEL J. SMYTH

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DAVID B. STEINMAN, *Chairman*
JAMES M. WELSH JOHN C. RIEDEL
ARTHUR V. SHERIDAN

DIRECTORS AT LARGE

Zone 1—Charles W. Burke.....Kings
Zone 2—Ignatius W. Conway.....Queens
Zone 3—George J. Nicastro.....New York
Zone 4—Thomas C. Desmond.....Dutchess
Zone 5—Elmer C. Lawton.....Albany
Zone 6—Albert W. Spencer.....Washington
Zone 7—Charles S. Keating.....Onondaga
Zone 8—Edward E. Stickney.....Broome
Zone 9—Elwin G. Speyer.....Erie

DIRECTORS

(County Chapter Presidents)

Gardner C. George.....Albany
William L. A. Arctander.....Bronx
William W. Perry.....Broome
Clifford C. Cheney.....Chaut.-Catt.
Kenneth E. Pearce.....Dutchess
Elwin G. Speyer.....Erie
James F. Fairman.....Kings
Lewis E. Kohl.....Monroe
Frederick W. Malkmus.....Nassau
Emil H. Praeger.....New York
Edward T. Hager.....Niagara
E. Philip Crowell.....Onondaga
Farries R. Quackenbush.....Orange
George H. Bruns.....Queens
Carl W. Robbins.....Rensselaer
Joseph J. Welsh.....Richmond
George H. Schumacher.....Rockland
William W. Chadsey.....Schenectady
Lacy Ketchum.....Steuben
Rodney E. Cook.....Suffolk
Sylvester C. Sullivan.....*Tri-County*
Joseph A. Brady.....Westchester

PROGRAM

Twelfth Annual Meeting

Hotel Commodore, N. Y. May 26 and 27, 1939

Friday, May 26, 1939

4:00 P. M. MEETING OF THE EXECUTIVE BOARD
Room A—Ball Room Floor

6:30 P. M. DINNER MEETING OF THE EXECUTIVE BOARD
South Room—Lobby Floor
After dinner the Executive Board will continue its deliberations in the South Room.

Saturday, May 27, 1939

9:00 A. M. REGISTRATION
Delegates and Guests—Main Ball Room Foyer

9:00 A. M. CONFERENCE
Chapter Secretaries—Room A——Ball Room Floor
Direction of Financial Secretary, Ernest F. Fox
Chapter Membership Chairmen — Room B — Ball Room Floor
Direction of Vice-President Andrew K. Johnson
Chapter Legislative Chairmen — Room C — Ball Room Floor
Direction of Engineer Herman F. Lame

10:00 A. M. GENERAL ASSEMBLY
East Ball Room
Meeting called to Order by President Alfred E. Roche
Opening Remarks
Appoint Tellers
Charge Resolutions Committee

10:20 A. M. BUSINESS ASSEMBLY
Vice-President Andrew K. Johnson, Presiding
Roll Call of Officers and Delegates
Minutes of Previous Meeting
Communications

10:30 A. M. REPORTS OF OFFICERS

10:50 A. M. REPORTS OF COMMITTEES
Legislation—Engineer Herman F. Lame
Membership—Engineer Andrew K. Johnson
Publicity—Engineer Linford S. Stiles
Ethics & Professional Practice—Engineer David B. Steinman
Practice Violation—Engineer Andrew K. Johnson
Audit—Engineer George A. Sallans
Patent—Engineer Louis Davidson

11:30 A. M. REPORT
Committee on Resolutions

11:50 A. M. SYMPOSIUM—Topics
Legislation
1—Amendments to the present practice act which are intended
a—To make the law more enforceable.
b—To clarify and codify examination requirements.
c—To clarify and expand definition and scope of Engineering practice.
2—Amendment to laws relevant to public office wherein such agencies perform Engineering functions.
Direction of Trustee Arthur V. Sheridan.
Conduct of Society
1—Consideration of the method of selecting and the number of delegates to conventions and meetings.
2—Organization of enforcement committees in the various chapters.

12.10 P. M. RECESS FOR LUNCHEON

12:30 P. M. LUNCHEON—Grand Ball Room
Guests
Hon. N. Max Dunning, Assistant Chief of Procurement Division, Treasury Department, Washington, D. C.
Hon. Thomas C. Desmond, New York State Senator.
Dr. Matthew Albert Hunter, Dean of Metalurgical Engineering, Rensselaer Polytechnic Institute, Troy, N. Y.
Col. Maurice E. Gilmore, Regional Director of P.W.A.
Allan R. Cullimore, President of the Newark College of Engineering.
Brother Amandus Leo, Dean of Manhattan College.
Thorndike Saville, Dean of New York University.
Harry S. Rogers, President of Polytechnic Institute of Brooklyn.
Engineer Willard S. Conlon, Executive Secretary, National Society.
Engineer George T. Seabury, Secretary, American Society Civil Engineers
Edwin Sharp Burdell, Director, Cooper Union.

2:45 P. M. BUSINESS ASSEMBLY—East Ball Room
Reconvene
President Alfred E. Roche presiding
Unfinished business

3:00 P. M. REPORT OF TELLERS
Installation of Officers.

3:15 P.M. NEW BUSINESS
Adjournment

Col. W. B. Tuttle Honored at Annual Meeting of Bexar Chapter, Texas Society of Professional Engineers

Standing. Left to right: Col. W. B. Tuttle, Past President, Texas Society of Professional Engineers; Fred E. Rightor, Present President of the Society, and Secretary of the State Board of Registration for Professional Engineers; J. W. Beretta, Vice President, National Society of Professional Engineers; and the Hon. Robert L. Babbitt, Chairman of the Texas State Highway Commission.

An impressive milestone in the history of the Bexar Chapter, Texas Society of Professional Engineers, occurred on Friday, May 5th. This was the occasion of the Annual Meeting of the Chapter held on the open air roof garden of the Gunter Hotel in San Antonio. A cocktail hour preceded the evening dinner-meting. An enthusiastic group of seventy engineers from Kerr, Kendall, Comal, Bandera, Guadalupe, Bexar, Medina, Wilson, Frio, Atascosa, LaSalle, and McMullen Counties, and a large delegation from the Travis Chapter in Austin, headed by President Seaholm, attended this meeting and pronounced it highly successful.

The most important event on the program was the honoring of Colonel W. B. Tuttle, First Past President of the Texas Society, by the presentation of an engraved certificate awarded to him for outstanding service to the engineers of Texas. Colonel Tuttle followed with an eloquent talk on the objectives and aims of the Texas Society. The toastmaster for the evening was the Honorable Robert Lee Bobbitt, a practising attorney and Chairman of the Texas State Highway Commission. Judge Bobbitt also made a sincere talk on the importance of professional cooperation as exemplified by his experience in his legal profession and his respect for, and his knowledge of, the engineering profession.

Other speakers were Engineer Datus E. Proper, Secretary of the Texas Good Roads Association, who spoke enthusiastically about the value of engineering cooperation and the development of good roads. Engineer T. B. Warden of the Travis Chapter and Chairman of the State Membership Committee of the Texas Society, spoke briefly on membership developments and on legislative work facing the Society during the present session of the Texas Legislature. Engineer Fred E. Rightor, President of the Texas Society of Professional Engineers and Secretary of the State Board of Registration for Professional Engineers, followed with a talk outlining present progress of the Texas Society and plans for the future, and achievements of the State Board of Registration.

The meeting was presided over by J. W. Beretta, retiring President of the Bexar Chapter and Vice-President of the National Society of Professional Enginers, who relinquished his post to the new President of the Bexar Chapter, Engineer A. C. Lloyd. The meeting closed with the installation of other new officers as follows:

1st Vice-President.....N. Bernard Gussett
2d Vice-President.....Walter L. Eyres
Secretary.....Rufus A. Nicholson
Treasurer.....Clyde A. Adams
Director.....C. P. Reming
Director.....H. R. F. Helland
Director.....P. K. Lucke
Director.....J. W. Beretta

A closing talk was made by retiring President J. W. Beretta on the objectives of the State Society for the ensuing year.

THE MAN WE DON'T KNOW

By John J. Caton, Director, Chrysler Institute of Engineering

(Continued from May issue)

The world never was so full of pessimists, yet they are still new frontiers for smart people. Jeremiahs are today lifted to high heaven, verily, we live in a day of terrific indictments and feeble solutions. Our solutions are feeble because for the most part we are indicting the wrong things. We cry out against the profit system, capitalism, "industrialism" and the machine in spite of the fact that it is rather easily demonstrated that these same bogeys have given us poor fools more material blessings and more cultural opportunities in less time than were ever enjoyed by any other people who have lived on the planet.

These are two types of culture in the world: a materialistic culture about which nobody raves, and an idealistic culture about which everybody raves. The materialistic culture, as crude and as crass as it appears to some of the critics of this modern age, has throughout the generations of men, done the obviously prosaic thing of paying for the idealistic; and it is, therefore, important. It did this for Socrates and Plato. It did it for Aristotle who had the good sense to marry the richest woman in Greece. Her money gave him the leisure time in which to think, and I have not the slightest doubt the lady gave him plenty to think about. So, he became a philosopher. It did it for Dante, who said himself he had spent all of his life climbing other men's stairs and eating other men's bread, and for Shakespeare who never wrote a play except on contract. Orators have a way of "pointing with pride" to the "fabric of civilization" and pointing out to enrapt multitudes that there are two main threads running through this marvelous fabric—A "crimson thread of glory" which represents the great warriors and military chieftains of the world, and a "silver thread of glory" which represents the poets, teachers, philosophers, musicians, and the artists of the world. But the eloquent gentlemen overlook a very important cable of glory which runs right through the middle of the "fabric of civilization" and upon which it hangs and without which it never could have been. This is a cable of industry, commerce, and business, a golden thread of glory, if you please, which has paid for all the killings by the military chieftains and all of the idealizings of the philosophers, poets, and artists. I believe in giving even the devil his dues, but historians and orators of popular consumption evidently do not.

And what has this "crude, crass, materialistic" culture done for us? I submit it has a fair record of historical performance. By using our brains and science and skills, we took a country in 1790 and by 1930:

We raised an income of 400 millions to one of 80 billions.

We raised a net wealth of 500 millions to one of 375 billions.

Our populations grew from 3 millions to 127 millions.

We built more than 3 millions miles of public roads and paved 600,000 miles of them.

We have built more roads than all the rest of the world since 1914.

We produce 92 per cent of the automobiles built in the world.

We operate 23 millions of cars over these roads of ours.

We have more radios than all the rest of the world combined.

And it is certain we listen to more stuff over them, but this can be cured.

We have more bath tubs than all the rest of the world.

The London, England, "Sphere" just recently had this to say:

"The United States contains 6% of the world's area and 7% of its population. It normally consumes 48% of the world's coffee, 53% of its tin, 56% of its rubber, 2% of its sugar, 72% of its silk, 36% of its coal, 42% of its pig iron, 47% of its copper and 69% of its crude petroleum.

"The United States operates 60% of the world's telephone and telegraph facilities, owns 80% of the motor cars in use, operates 33% of the railroads. It produces 70% of the oil, 60% of the wheat and cotton, 50% of the copper and pig-iron and 40% of the lead and coal output of the globe.

"The United States possesses almost $11,000,000,000 in gold, or nearly half of the world's monetary metal. It has two-thirds of civilization's banking resources. The purchasing power of the population is greater than that of the 500,000,000 people in Europe and much larger than that of the more than a billion Asiatics.

"Responsible leadership which cannot translate such a bulging economy into assured prosperity is destitute of capacity. But pompous statesmen, looking over the estate, solemnly declare that the methods by which it was created are all wrong, out to be abandoned, must be discarded, that the time has come to substitute political management for individual initiative and supervision.

"There's only one way to characterize that proposal—It is just damn foolishness."

When I have quoted some of these figures, I have had people remark, "Exactly. It is a wonderful record of materialistic accomplishment. But that is not life. It is only 'crude, crass, materialistic culture'. I am interested in the higher things of life". Thinking some of you might feel the same way about it, I looked up some figures for you, remembering that "a man with facts can break an argument". And what are some of the evidences that we have had great cultural development?

For one thing, I found that we built more than three times as many colleges in that 140 years between 1790 and 1930 than all the rest of the world combined had ever built in any similar period of time and that we endowed them with more than four times as much money. We built more than three times as many libraries in that same period of time than all the rest of world ever built in the same length of time, and put nearly four times as many books in them. In 1933, at the very bottom of our depression, we put 29,500,000 boys, girls, and young people in schools and colleges in this country and employed a million teachers to teach them. This means approximately a fourth of our total population working at this thing we call "idealistic culture" and if we are not getting on with it it is high time we teachers re-examined our jobs because somebody has

certainly paid the bills. It may be this golden thread of glory which nobody thinks to mention has done the paying.

But more than that, much more. In the life of one generation, we have seen the 12 hour day disappear and tagged "inhuman". And the 10 hour day has gone also, and now we have an 8 hour day and a 5 day week, plus the sit-down, and the end is not yet. I am citing some of the idealistic cultural advantages we possess. But in my lifetime, since my college days, indeed, I have seen high school attendance increase 700 per cent and college attendance increase 300 per cent. These are supposed to be highly idealistic cultural enterprises. At least they are peculiar to our situation, because such things never before happened on such scale to any other people in the world. But this is not all. What with our public libraries, extension courses, evening classes, radio, public lecture courses, and a thousand other educational activities I have no time to catalogue here, we are literally hurling learning and "idealistic cultural opportunities" at the heads of masses of people, and we are the first people in all the world to undertake it on such a universal scale.

Besides this, some 200 industrial enterprises over this country of ours carry on extensive and intensive training courses to finish off the work done in the schools and colleges, some of them so thoroughly organized as to be chartered to grant advanced degrees.

I submit that this is fair historical exhibit of the truth that the materialistic culture always pays for the idealistic. This is exactly as it should be. The poet should be paid for his "poetizing", but he should understand also the "why" of his eating.

This is a changing world. But it always has been. And a changing world always presents new frontiers. As civilization advances, frontiers become more difficult to identify and much more difficult to conquer. In the face of such difficulties, masses of men are inclined to cry "wolf" and point out the failure of the thing we have done. The commencement orator at the little college from which I first graduated 38 years ago was so able at this business of pointing out what dangers the country faced at that time and did it so eloquently, I still remember one of his sentences. In his most eloquent manner, he exclaimed, "Young men, your country faces great danger. The politicians are corrupt, criminals rule our cities, and women are no longer home makers; and men are no longer courageous for the right. In fact, grim ruin stalks abroad throughout the land. I now call upon you to go forth as young knights intent only upon saving this, our glorious land." Well, the old fellow was eloquent.

But so was the "Godlike Daniel" Webster, for in his second speech on a subtreasury bill, made March 12, 1838, almost exactly one hundred years ago, he said:

"And yet there are persons who constantly clamor against the state of things.

"They complain of oppression, speculation and the pernicious influence of accumulated wealth.

"They cry out loudly against all banks and corporations, and all the means by which small capitalists become united in order to produce important and beneficial results.

"They would choke up the foundations of industry and dry all its streams.

"In a country of unbounded liberty, they clamor against oppression.

"In a country of perfect equality they would move heaven and earth against privilege and monopoly.

"In a country where property is more equally divided than anywhere else, they rend the air with the shouting of agrarian doctrines.

"In a country where the wages of labor are high beyond all parallel, and where lands are cheap, and the means of living low, they would teach the laborer that he is but an oppressed slave.

"Sir, what can such men want? What do they mean?

"They can want nothing, sir, but to enjoy the fruits of other men's labor.

"They can mean nothing but disturbance and disorder, the diffusion of corrupt principles and the destruction of the moral sentiments and moral habits of society."

Shall we go on listening to this sort of thing, this constant clamor against what is the state of things? I hope not. It is not the way of progress. What we need is the identification of some new frontiers, and new methods of conquesting them.

One of the popular novelists of the day has recently written a book in which he has his young hero complain that when his grandfather pioneered in Indiana, it was a wilderness. It has a frontier, *was* the frontier. There were trees to fell, logs to cut, rails to split, and fences to build. The old grandfather knew his frontier, had a job and did it. Now the "frontiers are all gone". "Here I am", he exclaims, "grown to manhood, educated in a state university, frontiers all gone, and I demand a job".

Poor boy: Mistaking frontiers. Certainly, the geographical frontiers of which he speaks are gone. But in the conquesting of that one, his grandfather made it possible for him to conquest far more interesting ones, if only he has the good sense and ability to identify them. Rail splitting is gone. But splitting molecules had just begun.

Do you have an "electric pig" in your kitchen to eat up your garbage? Do you serve berries grown in chemicals in your basement? Does an "electric eye" guard your house and call the policeman without disturbing your reading or your bridge game? Do you have a radio facsimile printing attachment? Is your clock electrically timed? Does your car have a continuous gear ratio? Is your milk delivered in paper containers? Does your camera take as good pictures indoors and in the rain as you used to get in the sunshine? Do you attend three dimensional movies? Is your house air-conditioned? Perhaps you live in a pre-fabricated house, with partitions which move at the touch of a button. and which is warmed without radiators, and whose lighting system is so modern that by pressing a switch you change the entire decoration of the room and fittings to suit the color of dress worn by the honor guest.

No? My word, but you are old-fashioned!

Do you travel on the Queen Mary or the Normandie? Do you ride the Zephyr now and then? Take a dinner in New York, go to bed on a sleeper plane, and have breakfast with a friend in California? You do none of these things? Too bad. You are out-of-date.

Of course now and then you sit with your elbow on the arm of your chair and call up a friend in Timbuktu for a quiet little chat. Perhaps you carry your own private telephone in your watch pocket tuned to your business associates and intimates, each one having a different wave length.

Well, most of these are commonplace, yet we are thirty years behind what we really ought to be doing.

Here is a partial list of the crop of new things 1936 brought forth:

A power alcohol plant in Atchinson, Kansas, using ethyl alcohol with a blend of gasoline.

Pre-shrunk paint.

An explosive more powerful than nitro-glycerine made from corn products' wastes.

Plastics innumerable at the rate of one a day.

A smokeless, flashless powder.

200 inch telescope.

Synthetic wool made from casein.

A method of packing milk under pressure of oxygen so that it will keep sweet for months.

Making salt water fresh by passing it through tubes of synthetic resin made from formalin and tannic acid.

Glass skillets that cook over an open flame.

We will soon have:

Glass building blocks.

Glass springs for our beds.

Glass radio sets.

Glass shingles for our houses.

Glass wicks for our cigarette lighters.

Glass razor blades.

Glass road surfaces.

Glass draperies, upholstering, carpets, awnings, etc.

Glass spring boards for swimming pools.

In the air today:

500 miles per hour is only a "breeze".

China Clippers running on schedule.

Trans-continental air sleepers.

Special 100 octane fuel.

Meanwhile:

Boulder Dam was finished.

The Oakland Bridge has been opened.

Seventeen Mile New York Tri-Borough Bridge is being used.

Automobile:

Disc wheels universal.

Hypoid rear axle gearing.

Defroster equipment.

Counter-sunk gadgets.

Duel carburetors.

Glass pistons.

Tractor:

Self-starter.

Headlamps.

Rubber tires.

Multiple speed transmission.

Built-in radio.

New process of permanently coloring metal is just about ready and there are 100,000 trailers now in use.

But more than this, we are using concrete hinges for bridges, cotton to build highways, cement-coated shingles and siding, tractors that run on either land or water, the tires being large enough to float them and acting as paddle wheels at the same time, and a method by which whiskey can be aged by sound in seven hours to equal four years in the wood. This will be a boon to singers of "Sweet Adeline".

These are some of the frontiers conquered and in process of being conquested by scientists and inventors. Is there danger of making too much progress?

Well, a recent survey shows the following results:

In families of $2000 income, or below, one half of them had radios. In families whose incomes were $10,000 or above, they all had radios.

In families of incomes of $2000 or less, only half of them had cars, and only 14 families out of 1,000 families with incomes beyond $5000 had high priced cars.

Only 55 families out of every 1,000 families in the $2000 income bracket had artificial refrigerators and only 302 families out of the $10,000 income group had them.

In the $2,000 income group, only 24 families out of every thousand had ever had one representative take a trip to Europe and only 140 families of the $10,000 group had had such an experience.

Now our problem, our new frontier, is to see if we can adjourn our perpetual debating society which just now is devoting practically all of its time to a debate about who is not to do the work, and all go to work to create sufficient goods to go around. It is nonsense to talk of distributing something we have not produced and do not have. An old Louisianian, when I asked him if he was interested in the Huey Long "Share the Wealth Plan", said he was until he took the total income of the country—75 billions—and divided it by 130 million people and found his share would be only $500. He was already getting more than that, so he was against it!

Our problem is the creation of more wealth. Since only goods and service constitute wealth, it is important that we start producing more and more goods. The only reason an American buys more than a Chinaman is because he produces more; and if ever, for any cause, he cease to produce more, he will cease to buy more. To produce more and have the goods consumed, they must be made better and cheaper. The automobile industry offers a striking example of the truth of this somewhat simple, but misunderstood economic fact; and it is more than a theory, it is a fact. In 1912, an automobile was advertised in the *New York Times*. It cost $5500, weighed about 2 tons, rattled like a jolt wagon after three month's use, and was always out of fix. Under the picture of the car, the maker advertised boldly in large letters:

THIS CAR HAS BEEN KNOWN TO GO 70 MILES ONCE WITHOUT A BREAKDOWN.

But nobody bought cars then. They were too unreliable and too expensive. There were probably about 70,000 in the entire country.

But see what happened. The automobile makers went to work conquesting a thousand frontiers; and nobody but men engaged in the manufacture of automobiles knows how many frontiers and headaches and heartaches there were, with the result that today the car is twenty times as efficient, only half as heavy, and one-eighth as expensive. And there are 23,000,000 of them on the roads. A serviceable thing has been democratized.

This must happen to new homes. Half of all the houses in the country, in light of what science knows about building homes, are obsolete today. It must happen to air-conditioning the homes we have. It must happen to facsimile recorders, service for the copy, television and a thousand and one things people want and need. Why in 1922 a four tube hetreodyne radio cost $350. See what has happened in this field.

We are just beginning. We are a new civilization still in the pioneering days. We should not be cluttered up with a lot of nonsense about industrialism, the machine, th e profit system, the "Machine-cursed man", and a "Frankenstein monster", and what not. The country should be finished. It is still in the raw state.

Our civilization is new. It is based upon science, and all we need do to make it enduring and alluring is to keep the scientific, the materialistic, and the idealistic phases of it in balance. But our intelligentsia seem to think the world is finished.

As a matter of fact, a third of all our houses, half of all our furniture, much of our railroad equipment, and most of our autos are already obsolete.

Apparently, a few simple-minded people read the Sunday blazers and there find discussed "Germ Warfare", "Trips to the Moon", "Producing Life in the Laboratory", "Death Rays", "Rockets to the Planets", and other such dream stuff issuing from facile pens and get excited. There is enough to excite the imagination which has scientific truth in it. So there is no sense in being worked up over this sort of thing.

And scientists know pretty much what the future will be like. Jules Verne did, but nobody believed him, Bellamy did, but we thought he was romancing! DeVinci designed an airplane and but for a spark plug which made the internal

(Continued on page 23)

NEWS OF STATE SOCIETIES

Editor's Note: THE AMERICAN ENGINEER will carry reports of State and Chapter meetings in the issue succeeding their receipt. We must have copy by the 20th of the month preceding the month of issue. Copy received after that date runs the risk of not being on time.

CONNECTICUT

CONNECTICUT ENGINEERS FORMULATE 1939 PROGRAM

At a recent State Director's meeting Engineer president, Richard H. Whitehead advised that the special committee appointed had formulated a ten-point program for the Society to follow during the year 1939.

These ten points clearly define the aims and objectives of the Conn. Society of Professional Engineers and will shortly be distributed to their entire membership.

1. To invite into membership key men in the profession who by their influence, position, and capabilities, will increase the prestige of the Society, attract wide following and make possible the accomplishment of the forward program hereafter set forth.

2. Recognizing that there has been a great advance in all arts closely allied to engineering during the past 10 years of the depression period and that as a result there is a tremendous obsolescence and depreciation in America's plant and equipment, and that any permanent revival of business must synchronize with a vast replacement and modernization program, we propose close cooperation with the Manufacturer's Association of Connecticut, so that we may play a forward and active part in the modernization and replacement of American plant and equipment. Our special talents give us a special fitness for this basic program.

3. The Society has much to offer in connection with public works and their economical accomplishment. It is our duty under the registration laws to see that government agencies secure sound and experienced advice and assistance, and that it be rendered consistent with the high standards of ethics of the Society with the aim of safeguarding the use of public funds and to secure the best values for public expenditures.

4. As a group we have been constant advocates of the spirit of free enterprise by which our country has become so great, and we will support any government measure which has as its aim the continuance of safeguarding of this principle and we hereby place ourselves on record that we believe that only under this American system can our nation move permanently forward.

5. We recognize the necessity at this time of a large program of preparedness which, considering the armament competition of the world is in reality a program of protection and fitness. We recognize the undertaking is largely an engineering problem which must be carefully coordinated and directed. We pledge ourselves as individuals and as a group to our best efforts in accomplishing this program and to a full cooperation with any governmental agencies directing same.

6. We are ready and willing to assist any type of Agency which can show it has a program which will enable industry and capital to go forward for the prosperity of the Country as a whole.

7. Any Registered Engineer is to be welcomed into our group and to be recognized as a brother in the profession. Engineering is a diversified profression and many members have specialized understanding and experience; his own service to the public and to his client will be enhanced by closer cooperation in our group.

8. We recognize that the Engineering Profession and the Arts are subject to rapid and evolutiontry advances. New methods and new developments in all lines are contributing to our progress as a nation. As a Society we pledge ourselves to cooperate in the interest of public welfare and in this connection we recognize the importance of the National Technical Societies and they have our full hearty endorsement. We urge our membership to take an active part in these activities in their specialized fields.

9. Registration under the law is a public trust and a commission to safeguard the public interest. It is our duty to fulfill this trust. Professional engineers in Connecticut are invited to membership so that they may not only secure the advantages of membership but so that they can render their services to the Society that has the obligation of safeguarding public and private interests under the registration laws.

10. The increased complexities of our modern industrial society require a high standard of specialized engineering knowledge in a wide diversity of fields. Only a society such as ours can meet in a single group these requirements. We pledge ourselves to full cooperation as individuals and as a group to play the part that is ours by right and we invite the support of public and private interests so that we may render the maximum of service and the endorsement of the National Societies in the various branches of the Engineering profession.

HARRY HARRIS RE-ELECTED PRESIDENT OF THE SONS OF THE AMERICAN REVOLUTION

Harry E. Harris, Bridgeport, Connecticut, was re-elected President of the General Gold Seleck Silliman Chapter, Sons of the American Revolution, at a recent meeting commemorating the 150th anniversary of the inaugural of George Washington.

Engineer Harris is National Director of the Connecticut Society of Professional Engineers.

INDIANA

I. S. P. E. NEWS LETTER

Issued by Indiana Society of Professional Engineers, Inc.
Editor: T. J. Poggiani Circ. Mgr. G. L. Knoll
Operations Mgr: W. A. Miller
Indianapolis, Indiana.

OUR SPECIAL ISSUE

The April issue of the News Letters, enlarged and put out in printed form to all registered engineers in Indiana, proved to be a great success. In addition to favorable comment by the membership, it is gratifying to note that several applications have been received from prospective members as a result of our April News Letter reaching into new territory.

More and more of the better known engineers and employers of engineers are being attracted to the Society, and it is certain that our organization will continue to grow in numbers and in prestige as we continue to keep it before the eyes of all engineers throughout our State.

The cost of the enlarged News Letters is such that it cannot be repeated for every issue. However, it is hoped that the publication may be put out in that form to all registered engineers about once in every three or four months. Eventually the membership will become large enough to warrant a permanently larger News Letter.

NEW MEMBERS

Several new members have been taken into the Society recently, reports Chairman Pierce of the Membership Committee, bringing our total up to 512 members, 60 Juniors, and six applications on hand to be acted upon in the near future. The new members are:

J. M. Barnett	ISHC	Muncie
J. R. Gates	Contractor	Hagerstown
W. M. Griffin	ISHC	Indpls.
B. J. Bisch	St. Mary of Woods	Terre Haute
D. D. Dennis	City of Indpls.	Indpls.
M. F. Love	(Junior)	Marion

The News Letter takes this opportunity to welcome these newcomers into our Society. We hope their association with us will be most pleasant and profitable to all.

RETIRING OFFICERS

As the Indiana Society of Professional Engineers prepares to enter upon its third year of activity, let us pause for a moment to think back over the past two years. The Society has grown from a temporary group of 13 engineers to an organization comprising 512 members and 60 Juniors. This phenomenal growth is the result of the confidence and enthusiasm of a faithful membership in an organization which supplies a real need in the engineering profession.

However, any enterprise, no matter what its purpose or how willing its members, must have leaders. Our Society has been extremely fortunate in this respect. and it is fitting that we acknowledge the excellent job that has been done by our retiring officers, most of whom have served since the beginning and who have watched the organization prosper as a result of their guidance.

The membership is especially grateful to President Sultan Cohen for his untiring and unselfish devotion to the Society. He brought to the office a personal charm and a professional integrity which contributed immeasurably to the prestige of the organization. Secretary J. V. Smythe has also done an excellent job in a position which entails a vast amount of detail work plus the handling of correspondence, the capable control of which has much to do with the success of any venture.

In short. our retiring officers may look back upon a task well done, and the membership may be justly proud of a society which has come such a long way in such a short time.

HIGHLIGHT OF APRIL MEETING

Outstanding in the April meeting of the Society was the address by the guest speaker, Sam Hadden, on "Engineers' Organizations." Mr. Hadden, a graduate of the University of Illinois, practiced engineering in the Middle West, entered into journalism in Indianapolis, and is now Executive Secretary of the Mineral Aggregates Association.

Absorbed only in their professional work, the speaker said. engineers neglect almost entirely the status of their profession in society. Instead of following purely technical lines, they should become active in engineering welfare societies, which embrace all possible branches. Technical societies tend to break up along lines of their various activities, thus diffusing the potential united effort of engineers. Hindering the formation of welfare societies has been the attitude of founder societies because of jealousy. Above all we should never associate with trade unions or employ the methods they do for advancement.

Mr. Hadden then warned the Society of disintegrating factors. Many joined the American Association of Engineers in the hope of salary raises, and not realizing that immediately, they began to drop out. The subject of engineers' salaries is not a new one for such salaries have always been comparatively low. Those now joining the Society of Professional Engineers must realize that increase in salaries must come trough a gradual development, and not overnight. Again, strife in some local chapters occurs only because the object of the dissenters is to set up a new national society on the wreckage of the old—a thing to watch. Strife caused by petty jealousies and grievances among our members must not be allowed to assume gigantic proportions.

"The sands of time are strewn with engineering organizations," said Mr. Hadden. But our Society may profit from their mistakes, and if we avoid their pitfalls and work for the welfare of the profession as a whole, advancement of the engineer is inevitable.

ARKANSAS STATE SOCIETY SECURES PASSAGE OF BILL

The Arkansas Society of Professional Engineers has been making splendid progress. It recently sponsored and secured the passage of a bill in the 1939 session of the State Legislature, requiring all public works exceeding in cost $5,000.00 to have plans and specifications and the work supervised by a registered Professional Engineer. This requirement was not in the original Act, and was a source of considerable criticism, since difficulty had been experienced in securing proper enforcement of the Registration Law.

The new Act follows:

ACT NO. 335

An Act governing the construction of Public Works under certain circumstances.

Be It Enacted by the General Assembly of the State of Arkansas:

Section 1. Hereafter neither the State nor any township, county. city, town, or village nor other political subdivision of the State shall engage in the construction of any public work involving engineering, for which the plans, specifications and estimates have not been made by, and the construction executed under the supervision of a registered professional engineer, licensed to practice under the law of Arkansas; provided that nothing in this Act shall be held to apply to such public work wherein the contemplated expenditure for the complete project does not exceed five thousand dollars ($5,000). Provided this Act shall not apply to School Districts or county or townships where said construction is planned and executed according to plans and specifications furnished by authorized State Agencies.

Section 2. The violation of this Act on the part of a public officer shall constitute a misdemeanor punishable by any fine not less than Fifty Dollars ($50.00).

Section 3. All laws or parts of laws in conflict with the provisions of this Act are hereby repealed.

Section 4. That in order to safeguard life, health and property, and to promote welfare, an emergency is hereby declared to exist and this Act shall take effect immediately upon its passage.

APPROVED: March 16 1939.

To All to Whom These Presents Shall Come, Greeting:

I. C. G. Hall, Secretary of State of the State of Arkansas do hereby certify that the following and hereto attached instrument of writing is a true and perfect copy of Act No. 335 of The Acts of the General Assembly for the year 1939.

Signed: C. G. Hall, Secretary of State this the 25th day of May, 1939.

ANTHONY WAYNE CHAPTER NEWS

The Anthony Wayne Chapter held, one of its outstanding meetings of the year in April. This meeting took place at the Chamber of Commerce in Fort Wayne and opened with dinner being served to about 50 members and guests. Others arrived later for the regular meeting, bringing the total attendance up to about 125 in all.

The principal attraction of the session was the address of Mr. Hal Sours, Assistant Director and Chief Engineer of the Ohio Highway Commission. Mr. Sours spoke on "The Value of Professional Organization" and pointed out what had been done by other professions through efficient organization, paralleling this with suggestions for the improvement of the welfare of engineers through a society such as ours. He also drew the distinction between the founder societies with their function of advancing the technical knowledge of the profession and the National Society of Professional Engineers, which was created distinctly for the purpose of furthering the welfare of the engineer.

Another highlight of the meeting was the presence of Mr. Perry Ford, President of the National Society of Professional Engineers. He spoke briefly and then introduced Mr. Sours.

Mr. Sultan Cohen, President of the Indiana Society of Professional Engineers, was present at the session, as was Mr. L. T. Gootee, Secretary of the State Board of Registration. Pres. Cohen complimented the chapter on its splendid meeting and on its consistent activity.

OFFICERS ELECTED

"As a result of the annual election of officers for the Indiana Society of Professional Engineers, the official report of which was given at the may meeting of the Society, the following engineers were chosen to conduct the affairs of the Society for the next year:

President: M. G. Johnson, City Engineer, City Hall, Indianapolis, Ind.

1st Vice Pres.: Clyde A. Walb, General Dredging Co. Ft. Wayne, Ind.

2d Vice Pres.: Asher Gray, County Surveyor, Court House, Wabash, Ind.

Secretary: K. B. Wolfskill, P. O. Box 228 New Albany, Ind.

Treasurer: C. E. Vogelgesang, 4th Floor, State House Annex, Indianapolis, Ind.

National Director: (re-elected) D. H. Walker, 110 N. Illinois St., Indianapolis, Ind.

New Directors of State Society: Roy Biberstine (Ft. Wayne, Ind.) and John R. Gates (Hagertown, Ind.) were elected to succeed R. H. Bower and Carl M. Geupel.

K. B. WOLFSKILL,
Secretary.

NEW JERSEY

THE NEW JERSEY ENGINEER EDITORIAL

At a meeting of the Board of Trustees in April, the official name of the State body was changed from "THE NEW JERSEY ASSOCIATION OF PROFESSIONAL ENGINEERS AND LAND SURVEYORS" to "THE NEW JERSEY SOCIETY OF PROFESSIONAL ENGINEERS."

For those who had occasion to employ the old title in the course of correspondence, mailing of phamphlets, issuing of checks or in speaking to either individuals or groups. there finally dawned the realization that it was not only an unwieldly and difficult title to negotiate, but, also left the unfavorable impression of a definite inferiority complex.

The exchange of publications with other State engineering organizations established the concensus of opinion that a concise,

explicit name is the means to a very desirable end—favorable publicity. The Press, for example, is greatly influenced by an organization name adaptable for headline purposes. Furthermore, the Press seems to place little value on news released by organizations sporting long but unimpressive titles.

The Press is the greatest medium for publicity and this very important element is essential in any attempt to solicit public recognition and support of objectives to be embraced by the engineering profession.

Since 1929 too many persons have indicted the engineering profession on the count of having failed to recognize the maladjustment in the relationship of engineering and scientific development to their application in economic affairs. If the engineering profession is to recognize that marketing, financing and control of production is an integral part of its responsibilities, then it will also have to recognize publicity as an important adjunct to disabuse the opinions of those decrying the fallacies of a so-called "mechanical age."

The Engineering Profession has been challenged to assume greater responsibilities. Responsibilities that reach beyond the heretofore limitations of the ethical and technical scope of calculations, design and construction of efficient equipment. Responsibilities in the manufacturing processes that will dictate control of the tempo in production and establish relationship between supply and demand.

There are obligations to society that include the task of preventing engineering creations from being exploited by those who would, for example, permit pyramiding of production and thus contribute toward another future collapse of our national economic structure.

If such is the challenge to be met then rest assured that a definite program augmented by publicity is the major avenue of approach to the realization of such objectives. These objectives must emanate from profound study and planning, be publicized for public support and finally marshalled for concerted action and subsequent adoption, through legislation if necessary, demanded by public opinion.

The State body is to be complimented on this progressive foresight that paves the way for the accomplishment of greater responsibilities to be reflected in a greater sphere of influence.

CONFERENCE ON LAND SURVEYING

Recognizing the fact that there exists no forum for the discussion of improved methods of land surveying practice, the New Jersey Society of Professional Engineers inaugurated this year a series of annual conferences on land surveying. The conference this year was held at Princeton University, on Saturday, May 20, and consisted of a morning and afternoon session. The subjects which were discussed were choosen because of their bearing on the present day trends which have had a sudden growth throughout the country within the last few years.

PROGRAM

9:30 A.M. Registration
Inspection of University Engineering Equipment
10:00 A.M. Paper—"How to Use The New Jersey System of Plane Coordinates," by Arthur Noack, State Supervisor, New Jersey Geodetic Control Survey.
10:30 A.M. Discussion by Russell S. Wise, Passaic, N. J.
10:40 A.M. Discussion by L. A. Huber, New Jersey Division of Fisheries.
10:50 A.M. General Discussion.
11:15 A.M. "Suggested Standards for Descriptions," by Philip Kissam, Associate Professor, Princeton University, and Chairman, Joint Committee on Land Surveys and Titles, American Society of Civil Engineers and American Bar Association.
11:45 A.M. Discussion, B. A. Sleeper, Surveyor General, Province of West Jersey.
11:55 A.M. Discussion, C. Tilton, Practicing Land Surveyor, Phillipsburg, N. J.
12:05 P.M. General Discussion.
12:30-2:00 P.M. Luncheon Period.
2:00 P.M. "Land Surveying from a Lawyer's Point of View," Chester Mueller, Counselor-at-Law, Newark, N. J.
2:30 P.M. Discussion, A. R. Johnson, Professor of Civil Engineering, Rutgers University.
2:40 P.M. Discussion, P. Hehn, Title Plant Manager, New Jersey Realty Title Insurance Co., Newark, N. J.
2:50 P.M. Discussion, general.
3:15 P.M. "Riparian Surveys," H. Sherman, Practicing Land Surveyor, Camden, N. J.
3:25 P.M. Discussion. Arthur S. Hobby, State Supr. N. J. Riparian Stream & Water Survey.
3:35 P.M. Discussion, Wm. H. Collison, City Engineer, Ocean City.
3:45 P.M. General Discussion.

OKLAHOMA

The progress and development of anything new is always beset with obstacles and disappointments, but if the purpose is unselfish and the efforts of the sponsors sincere and honest, success will eventually be attained. So it is with the engineers' registration law. Progress has been slow, but the foundation upon which the law now rests has been solidly constructed, and the efforts which have been exerted are beginning to bring returns in the form of a more favorable public opinion.

Once the general public is thoroughly sold upon the idea that the engineers' registration law is fundamentally sound and is for the benefit of the public, the program of the engineers will go forward without interference. The Oklahoma Society of Professional Engineers was created primarily for the purpose of raising the standard of the engineers, to promote the general welfare of the public and to assist those responsible for the enforcement of our registration law. To accomplish the purpose of the Society, it will be necessary to have unity of thought exist amongst its members. Therefore, be loyal to your Society which is working to serve your interests; attend your district meetings and actively participate in the discussions; cooperate with those whom you have selected to direct the activities of the Society; for, without the aid and assistance of every member, the full benefit of the organization will not be realized.

May the Society depend upon your support.

By HENRY J. DARCEY,
President

COMMITTEE CONFERS WITH STATE BAR

At the annual meeting of the Oklahoma Society of Professional Engineers, a committee was appointed to consider the effect on the engineering profession, from the standpoint of its registration law, of the Act proposed by the Code Revision Section of the Oklahoma State Bar, providing for the codification of the various professional and occupational, registration and licensing enactments. This committee was composed of Engineers Wm. Furber Smith, V. C. Gillon, Chas. S. Larkey, John J. Stobaugh, Jr., C. W. Stoldt, and George G. Toler.

The committee considered at length the subject matter of the proposed Act and of the existing Engineering Registration Statute. In the course of this study, the Society's attorney was called upon for advice; and the experiences of the Society in its enforcement activities, that of the Board in its registration activities, and the results from several court cases that had been completed were used. Based on this consideration, a list of recommendations were prepared and submitted to the Code Revision Section of the State Bar, with the request that the proposed Act be modified sufficiently to eliminate the points to which exceptions were taken.

It is believed that only slight modifications will be brought about in the present registration law through codification if the recommendations of the committee are accepted.

ENGINEERS CLUB OF TULSA VISITS GRAND RIVER DAM

Approximately 150 members of the Engineers Club of Tulsa descended en masse upon the construction camp of the Pensacola dam on the Grand river recently. The entourage left the Club headquarters at 8:00 a. m. and arrived at the Holway camp on the top of the western-shore ledge about two hours later, ready to begin their tour of inspection.

Fortunately, the construction work was at its most interesting phase of development. Foundations were practically completed over the entire dam, and in several sections the structure was advanced to such an extent as to give an excellent picture of the technical and practical aspects of the project.

The Holway camp furnished an excellent vantage point from which to view in a general way the various phases of work in progress and to gain an introductory idea of the magnitude of the undertaking. It was here that Engr. E. L. Chandler, Chief of Construction, gave a brief description of the various phases of the activities before conducting the Club members upon a supervised tour of inspection of each separate unit of activity.

The party was diveded into groups of three or four cars each, under the guidance of an assigned engineer. As the party proceeded from the east end of the construction, where the close-up inspection was begun, these guide engineers were found to be quite competent in answering the various questions pertaining to processes of construction, handling of materials, forming, objectives of different elements, and the multitude of interesting points that were to be observed during the course of the inspection. Keen interest was shown in the work of shifting of the coffer-dams to divert the flow of the river over a portion of the work

under construction, to permit the completion of the span to the west bank of the stream.

After the completion of the inspection, the entire party was entertained at lunch in the construction camp dining room.

PENNSYLVANIA

The Reading Chapter of the Pennsylvania Society of Professional Engineers held a dinner meeting Wednesday, May 10, 1939 at the Regal Hotel, Hamburg, Pa. A moving picture, "Buried Sunshine," was presented by Engineer Leslie D. Lamont of the Philadelphia and Reading Coal & Iron Co., Pottsville, Pa. This picture illustrated the Anthracite Formations, and the Mining Methods employed in the hard coal industry of Eastern Pennsylvania.

LeROY F. CHRISTMAN,
Secretary

W. N. Smith, Chairman,
Meetings and Entertainment Committee.

At the April Chapter Meeting, after discussion of the project for a new Engineering Bureau recently suggested for the City of Reading, a resolution was adopted by the Chapter recommending that all Engineers in charge of each department of such a Bureau, should be Registered Engineers, and that the Mayor and Councilmen should be informed by letter, of the opinion of this body.

Certain proposed amendments to existing laws pertaining to Boards of Viewers, which would require one-third of such Boards to be Registered Engineers, having been reported by the Legislative Committee, the Chapter approved of sending of letters to State Senators and Representatives urging support of the amendments as proposed.

Another bill requiring the signature of Registered Architects or Engineers on each plan for buildings larger than 15,000 cubic feet, was also approved by the Chapter for similar action.

THE LEHIGH VALLEY ENGINEER

Lehigh Valley Chapter
Pennsylvania Society of Professional Engineers
Issued Monthly by the
Publication Committee—Engineer Hale Sutherland—Chairman

A Chapter gathering was held recently at the Pomfret Club, South Fourth Street, Easton, Pa.

Subject: "The Problems of the Young Engineer and What He Expects of a Professional Society."

This subject was discussed from two viewpoints, that of the practicing engineer and that of one engaged in the teaching of engineering.

Speakers: Eng. Robert A. Harrier (Lehigh University), and Prof. William E. Reaser (Lafayette College).

A gathering of 55 members and guests were present at the Allentown Elks Club in April. Engineer Craig, President of the Pennsylvania Society of Professional Engineers was our guest at this meeting and gave a short report on the work of the State Society in this year. Our guest speaker, Dr. Haring, Consulting Engineer, Lawyer, and head of the Construction Department of the New York World's Fair, described the construction problems and achievements of the Fair. Extracts from his description: Area, 1200 acres, 1¼ mile wide; former swamp and refuse dump transformed into a beautiful park; soil condition mainly sand; building foundations on piles; approximately 475 miles of piles were used; not a single tree on the plot at the beginning of the work; 10,000 new trees were planted by the Fair Commission, besides thousands of others by the exhibitors; acres of flowers were planted, including 1,000,000 tulip bulbs; flowers selected to match color scheme of buildings; 390 acres of exhibits; 280 acres of amusements; color schemes studied and planned by the Board of Design for years; 135 murals painted by 35 artists, some of them 30'x 40'; stucco, glass, mosaic, twisted strips of metal, asbestos, linoleum, ferro enamel, used to get the proper color and form effects; theme center, "perisphere and trylon," selected from 1,000 designs; perisphere 18 stories, 200' high; trylon, 60' on one side, 700' high; mercury lights imbedded in ground to light foliage of trees, thus producing general illumination; purpose of the Fair to create and increase trade and industry and to point toward a better future life.

THE LEHIGH VALLEY CHAPTER SPONSORS THE ORGANIZATION OF THE SCRANTON CHAPTER

Headed by President Craig, a group from our Chapter made the initial steps in April to organize, in Scranton, Pa., the tenth chapter of the State. At the meeting in the Hotel Casey, an enthusiastic group of 30 registered Engineers were addressed by President Craig, who placed before the assemblage the aims and purposes of the National and State Society of Professional Engineers and explained the advantages to be gained by each individual Engineer through the formation of a local Chapter.

A Steering Committee was formed at this meeting to nominate officers and arrange for the formal organization of this new Chapter. This Committee includes Samuel Baker, Director of Civil Engineering, I. C. S.; William Lesser; Tudor Williams; City Engineer Charles Schroeder; County Engineer Sam Mastriani.

Credit is due to our Past Chapter President Ramage for his unfailing efforts in connection with the organization of this new Chapter.

The following members of our Chapter were present at the first meeting: President Morrow, Past Presidents Lohr, Ramage, and Pidcock, Secretary Anckaitis, Directors Gaffney and Fraivillig, and former Directors Roeder and Carter.

NEW MEMBER

A cordial welcome is extended, on behalf of the Chapter, to the following new member:

ENGINEER P. G. BUSCK, 222 North Sixth Street, Allentown, Lehigh County, Pa. He was recommended for membership by Engineers Morrow, Pidcock, and Gaffney.

NEWS OF THE MONTH

An extremely busy month went past for the Chapter and its officers. We can truthfully say that our aim to educate the general public and make them more engineering conscious, in our territory, has been advanced. In April we arranged for State President Craig to address the Lions Club of Allentown at a noon meeting, on the subject of "The Professional Engineer." A similar address was delivered by President Craig to the Rotary Club of Easton also in April. This meeting in Easton was held under the Chairmanship of Prof. Wm. B. Plank, Head of the Mining Engineering Department of Lafayette College.

To fulfill an existing vacancy on the Professional Engineers Registration Board, due to the recent death of Mr. John Farris, the Pennsylvania Society of Professional Engineers, through selection by its Pittsburgh Chapter, requested Hon. Arthur H. James, Governor of the Commonwealth of Pennsylvania, to give his earnest consideration to five eligible engineers to succeed Mr. Farris. The Society recommended:

George S. Richardson, 7118 Meade Street, Pittsburgh, Pa.
George W. Scrusler, 324 Fourth Avenue, Pittsburgh, Pa.
Daniel E. Davis, 1050 Century Building, Pittsburgh, Pa.
Walter H. Frick, 612 Whitney Avenue, Wilkinsburg, Pa.
Ray S. Quick, Georgian Apartments, Pittsburgh, Pa.

"SPARKS"

Harrisburg Chapter
Pennsylvania Society of Professional Engineers
Russell S. Conrad, Sect'y and Editor of "SPARKS"
H. S. Mattimore, President

MAY MEETING

The regular business meeting was held at the Central Y.M.C.A. at Front and North Streets at 6:00 p. m., on May 15, 1939.

The Chapter extends a hearty welcome to four new members admitted at the April meeting.

C. H. Buckius, Mt. Gretna, Pa.
Lauer J. Baum, 212 N. Front St., Wormleysburg, Pa.
Karl F. Dodge. 1811 Anna St., New Cumberland, Pa.
Jared H. Tudor, 541 Camp St., Harrisburg, Pa.

RESUME APRIL MEETING

President Mattimore opened the meeting after a dinner enjoyed by thirty-eight (38) members and guests.

State President, Engineer Craig gave the members a brief resume of an average week's activities in the calendar of a State President. He reported the presentation of a charter to the newly organized Johnstown Chapter and requested this chapter sponsor the formation of a chapter at Shamokin.

The meeting was then turned over to Engineer Rahn who introduced by Mr. John W. Poulter, Research Engineer for the Koohring Company of Milwaukee.

Mr. Poulter showed moving pictures of the German military roads as well as pictures of the road show at Munich, English and Canadian highways, and many places of interest in Germany and England.

SPARKS FROM THE ANVIL

To aid private Engineers it has been suggested that the State stop furnishing free engineering service to local sub-divisions of the State Government. To cite one service—Curb and sidewalk plans. These surveys could be made by competent private Engineers or Surveyors and presented to the State for approval. This would also be an economy measure for the State and conserve State funds. There are other incidents where the State could benefit both the private Engineer and itself.

The P. S. of P. E. are supporting Senate Bills Nos. 803 and 804. These Bills apply to the Architects Registration Act and have the approval of the joint Engineers—Architects Committee. They more clearly define the practice of architecture in Pennsylvania.

Pennsylvania should follow New York and separate the registration of Engineers and Architects from the control of the Department of Public Instruction.

THE PITTSBURGH ENGINEER

Pittsburgh Chapter
Pennsylvania Society of Professional Engineers
Issued Monthly by Publications Committee
Martin C. Knabe, Chairman Earl Dwight Covell, Vice Chairman

CALENDAR

Pittsburgh Chapter Meeting: Assembly Room, Fort Pitt Hotel, 8:00 p. m., Thursday, May 18, 1939.
Speaker: James S. Devlin, Assistant Chief Engineer, Department of Public Works, Allegheny County.
Subject: ALLEGHENY COUNTY—ITS ORIGIN AND GROWTH.
Dinner: Fort Pitt Coffee Shop—6:30 p. m.
A four reel motion picture "WALLS WITHOUT WELDS" was also shown.

AMERICAN ENGINEER

Attention is called to the editorial in the April issue of the American Engineer. It touches on a very important question. The Pittsburgh Chapter might well adopt the suggestion and form a committee to present engineering to the engineers of tomorrow—the boys now in high school, who will enter engineering colleges in the next few years. An able committee can certainly help both those who are undecided and those who have already made up their minds.

EDITORIAL

It is not difficult to enumerate so-called faults of engineering, and countless words have been expended in reciting how these faults might be corrected. Engineering education, employment, salaries, ethics, "over-production," and all the rest have been gone over at great length and are still being gone over. One very good reason for changes occurring slowly, is that what appears as a fault to one man may not seem so bad to another; and since there are a lot of engineers, a fault has to be fairly evident and affect a great many people before much will be done about it.

Distant fields look greenest, and engineers are no exception when viewing the other professions. However, the others have these problems too. Articles in recent issues of the American Engineer show this very clearly. Engineers have one handicap that the others do not have to annoy them. To a great many people, "engineer" means an operator of a locomotive or some other type of engine; and the resulting opinion is not flattering to engineering as a profession.

Engineering is always going to have faults for those who are looking for them. If the individual engineer would realize that his own self-respect and the status of the profession depends entirely upon his own valuation, he would investigate more fully conditions which he considers faulty and choose more carefully his words in describing these faults. A common complaint is that engineers do not receive rewards commensurate with the services they render. Is criticism and self-depreciation with a consequential lowering of self-respect the proper answer to this question? Are any of our problems going to be solved by such methods? If engineers want engineering to be a respected profession they will have to do the job themselves, each individual assuming his full share of the load. The strongest force available is your own self-respect.

Martin C. Knabe.

NEW YORK

BRONX PROFESSIONAL ENGINEERS ACTIVE IN CIVIC WORK

At a meeting of the Bronx County Chapter of the New York State Society of Professional Engineers held at the Concourse Plaza Hotel in May, President Wm. L. A. Arctander reported participation of Engineer Hon. Arthur V. Sheridan, Pres. Arctander and other Chapter members in the ceremonies opening the new Major William F. Deegan Highway.

Mayor LaGuardia, Boro President Lyons, and Hon Arthur V. Sheridan praised the Engineers for their work in helping to make this new highway a success.

President Arctander attended the ceremonies of the Bronx Tercentenary and greeted General George Washington on his way to visit the New York World's Fair 1939.

Engineer Joseph B. Diamond reported excellent response to the essay contest from the High School Students and read many letters of commendation from Public Officials and Civic Leaders of the Bronx.

Engineers R. J. Van Wagner and C. E. Giraud met with the Allied Civic Association of the East Bronx as members of the Plan and Scope Committee and sent a resolution to the Mayor favoring a Bronx representative of the Board of Transportation.

Engineer Van Wagner reported receipt of a letter of appreciation from the Tremont Avenue Crosstown Subway Committee for the work the Chapter has done in promoting cross town subways in the Bronx.

Engineer Aubert of Manhattan College stated good progress is being made in arranging for engineering students of Bronx Colleges to attend the Chapter meetings. The Chapter voted to have the October meeting an open meeting devoted to greeting the students. It is hoped close and cordial relations may be attained between the Chapter and the Engineering Colleges for their mutual benefit.

Engineer Fitzpatrick told of progress being made to relieve the parking situation at Fordham Road and the Grand Concourse.

Engineers Arctander, Diamond and Knight who attended the Charity Ball of the Bronx Eye and Ear Hospital reported a pleasant occasion and good attendance for the benefit of this worthy institution.

Engineer Charles F. Giraud was elected a Director for 3 years. The Chapter is fortunate to retain the continuing active interest of Engineer Giraud in Chapter and Civic Affairs.

The Chapter was pleased to welcome Engineer Philip M. Drabkin to its membership and to the Bronx. Engineer Drabkin has transferred from Manhattan.

Approximately 700 people participated in a testimonial tendered to Vice-President John C. Riedel of the National Society of Professional Engineers by the public officials and his professional associates in the City of New York. The testimonial was held May 8 in the ball room of the Hotel Commodore. Engineer Riedel has been recently made Chief Engineer of the Board of Estimate which makes him the Engineering Advisor for the City of New York. The post of Chief Engineer is of such importance that the holder of that office is by virtue of his position a member of the City Planning Commission, which was established in 1938 in accordance with the provisions of a new city charter adopted the previous year.

Mr. Riedel has been identified with the public service for 38 years, having risen successively through the ranks from rodman to the position of Chief Engineering Advisor to the greatest city in the world represents in the fullest sense the career service employee within the framework of civil service. Interested throughout his life in civic, social, scholastic, and professional matters, he has achieved a notable distinction for his knowledge of government and understanding of human nature. His services to his fellow members of the engineering profession have been recognized by the incumbency of the following offices:

President of the Municipal Engineers of New York.
President of the Association of Engineers of New York.
President of the Kings County Chapter, New York State Society of Professional Engineers.
Vice-President of the Metropolitan Section of the American Society of Civil Engineers.
President of the National State Society of Professional Engineers.
Vice-President of the National Society of Professional Engineers.

A teacher of engineering, he has attained a wide distinction as an educator. Probably no man has been counselor to more young men preparing for or commencing an engineering career than has Professor Riedel.

A testimonial in the form of a beautifully inscribed watch was presented to John C. Riedel by Dr. D. B. Steinman in behalf of his professional associates. Among those present at the dinner were: Hon. Newbold Morris, Acting Mayor of the City of New York, Hon. Joseph D. McGoldrick, Comptroller of the City of New York, Hon. Stanley M. Isaacs, President of the Borough of Manhattan, Hon. Raymond V. Ingersoll, President of the Borough of Brooklyn, Hon. James J. Lyons, President of the Borough of The Bronx, Hon. William A. Calder, former United States Senator, Dr. Gano Dunn, Hon. George U. Harvey, Col. M. E. Gilmore, Hon. Fiorello H. LaGuardia, Hon. Vernon S. Moon, Hon. Joseph A. Palma, Hon. Lewis H. Pounds, Hon. John C. Riedel, Alfred E. Roche, Hon. Arthur V. Sheridan, Col. Brehon B. Somervell, Dr. David B. Steinman, Arthur S. Tuttle, Joseph A. Vertefeuille.

QUEENS COUNTY CHAPTER

The Queens County Chapter of the New York State Society of Professional Engineers, Inc. held its tenth anniversary dinner dance during May at the Stewart Manor County Club, Long Island.

Mrs. George H. Bruns was chairman of the women's committee. Engineer Bruns is President of the Chapter. Martin Nelson, of Long Island City, was chairman of the general arrangements committee. Many of the guests at the affair were members of the medical or legal professions.

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NIAGARA COUNTY CHAPTER

The Niagara County Chapter of the New York State Society of Professional Engineers Inc. closed its season with a May meeting, at which State President, Alfred E. Roche, of Troy, N. Y., was the principal speaker. There were forty members present.

President Roche said in part:

"This is the first meeting with the engineers of the Niagara frontier. Therefore, may I quote the law of the state defining an engineer. It is an extraordinary statute which says:

"'An engineer is a person who holds himself out as being able to perform, or who does perform a professional service such as consultation, investigation, evaluation, planning, design or responsible supervision of construction or operation in connection with any public or private utilities, structures, buildings, machines, equipment, processes, works or projects wherein the safeguarding of life, health or property is concerned or involved when such service requires the application of engineering data.

"'It shall be unlawful for any person to practice or to offer to practice engineering in this State or to use the title engineer or any other title, sign, card or device in a manner to convey the impression that such person is practicing engineering unless such person is duly licensed by the State.'"

The Niagara County Chapter has increased its membership this year by 21.6%. We are also rather proud of one or two items regarding our chapter. e. g., as far as we can ascertain, we are the only chapter in the United States which has a separate and substantial savings account in addition to its regular business checking account; we are very proud to have one member, Engineer James Naylor, of the Niacet Chemical Company, Niagara Falls, New York, who has never missed a meeting since January 1, 1934, when this chapter received its charter.

All of our meetings are dinner meetings and are very well attended. Some of the subjects which have been put before the group are:

"Aeroplane Design and Accomplishments"—Mr. Lloyd Child, Chief Test Pilot of the Curtiss Aeroplane Company and Mr. Rushmore Child, Chief of Aerodynamics, Curtiss Aeroplane Company.

"Niagara Falls Sewage Disposal Plant"—Engineer H. Wesley Clark, Niagara Falls, N. Y.

"Interesting Facts About Astronomy"—Mr. G. W. Blake, Niagara Falls, N. Y.

"Trip to Mexico"—Mr. Charles D. Mack, Niagara Falls, N. Y.

"Collapse of the Falls View Bridge"—Mr. Chester W. Wright, Niagara Falls, N. Y. and Mr. Alonzo Robertson, Niagara Falls, Ont.

"Lubricants and Bearing Metals"—Dr. Burwell, Alox Chemical Corporation, Niagara Falls, N. Y.

"Studies of Refractories and High Temperature Reactions by Colored Motion Pictures"—Henry N. Baumann, The Carborundum Company, Niagara Falls, N. Y.

The Regular Meeting of the Kings County Chapter of the New York State Society of Professional Engineers, Inc., was held at the Brooklyn Engineers' Club, No. 117 Remsen Street, Brooklyn, N. Y., May 18, 1939.

Mr. Hamilton N. Clarke, Branch Manager of the Associated Hospital Service of New York spoke on the group hospitalization plan.

Past President Burke was Chairman of the Convention Committee for the Annual Meeting of the State Society May 26 and May 27, 1939, at the Commodore Hotel. He was assisted by the following committee: George A. Dorfman, Chairman, William H. Byrne, J. Fjord Christensen, John T. Dollard, Joseph Fertik, John G. Foley, Gustav Freeman, John F. Guinan, Joseph Halpern, George A. Hartung, Joseph F. Mistretta, Harry P. Moran, John E. Setchell, Frank H. Sewall, William Spivak, Clifford W. Valentine, Fred Wackenhut, Harold E. Weeks, Arthur R. Zachert.

JAMES F. FAIRMAN, *President* — GEORGE A. DORFMAN, *Secretary*

BROOME AREA CHAPTER

The Broome Area Chapter, New York State Society of Professional Engineers Inc., and the Southern Tier Technical Society sponsored an engineers dinner at the Arlington Hotel in April, with the following committees in charge:

General Committee, S. Black, E. Beidler; Publicity Committee, L. R. Post, C. L. Wilder; Ticket Committee, W. H. Disbrow, F. M. Meier; Program Committee, G. E. Dana, W. G. Hill, A. T. Pack, W. R. Sweet.

PROGRAM

Co-Toastmasters

W. W. Perry — W. M. Boigeol

Guests and Speakers

John Giles, Engineer, City of Binghamton.

Geo. Bain Cummings, President, Chamber of Commerce.

Alfred E. Roche, President, New York State Society of Professional Engineers.

Professor W. M. Sawdon, Chairman, Ithaca Section, American Society of Mechanical Engineers.

W. W. Cotner, Chairman, Ithaca Section, American Institute of Electrical Engineers.

Professor N. Barnas, Chairman, Ithaca Section, American Society of Civil Engineers.

E. E. Stickney, Director Zone 8, New York State Society of Professional Engineers.

R. S. Walsh, General Electric Company—Guest Speaker—Television—Today and Tomorrow.

NEW YORK STATE SOCIETY OF PROFESSIONAL ENGINEERS

Officers

W. W. Perry, President; Harold Lauder, Vice President; R. S. Barton, Secretary and Treasurer.

THE SOUTHERN TIER TECHNICAL SOCIETY

Officers

W. M. Boigeol, General Chairman; E. W. Hardler, Vice Chairman; P. M. Reynolds, Program and Publicity Director; C. C. Beebee, Recording Secretary; W. C. Baird, Financial and Membership Secretary.

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A joint meeting of the Ithaca Section A. S. C. E. and the Broome Area Chapter of New York State Society of Professional Engineers was held at the Arlington Hotel, Binghamton, May 9, 1939. A dinner preceded the meeting.

The speaker was Charles Edward Smith, member of the A. S. C. E., and Vice-President of the New York, New Haven and Hartford Railroad of Hartford, Connecticut. He gave a descriptive talk on "New England Hurricane and Its Effect on the Railroads."

Since graduating from the Massachusetts Institute of Technology in 1900, Mr. Smith has been actively engaged in railroad service on a number of important systems. He has also been in consulting engineering practice, and in that capacity served the City of St. Louis and other cities. In 1916, he received the J. James R. Croes Gold medal from the American Society of Civil Engineers for deep foundation work.

R. Barton, State Highway Department, and Sheridan Black, Binghamton Gas Works, were in charge of registrations.

Roy Barton
Secretary and Treasurer

The Rensselaer County Chapter of the New York State Society of Professional Engineers held a dinner meeting at the Hendrick Hudson Hotel in Troy, N. Y., in April. This was a joint meeting of the Rensselaer, Albany, Schenectady, and Tri-County Chapters. Its success may be attributed to the efforts of their respective officers and the cooperation of State President Alfred E. Roche.

Elmer C. Lawton performed the duty of master of ceremonies in a manner which has long characterized the master of this delicate art. Tribute was paid to the memory of the late Col. Frederick Stewart Green by his successor Arthur W. Brandt, State Superintendent of Public Works.

President Roche delivered an address on the status of the engineer and his profession. He stressed the necessity of a purge to eliminate the practise of engineering quackery.

Milton E. Loomis, State Commissioner of Professional Education, delivered an address which clarified many phases of the relationship between his department and the State Society of Professional Engineers. He also explained the protection which is being provided to safeguard the interests of the engineering profession through the enactment of proper legislation.

Clarence W. Post, Chief Engineer of the N. Y. State Works Progress Administration, explained the exact working and financial structure of the W. P. A. The status of the W. P. A. worker was also explained. W. P. A. as a career is discouraged by relative compensation, hours of work, and regulations designed to discourage any such tendency on the part of the worker.

William Otis Hotchkiss, President of Rensselaer Polytechnic Institute, presented an address on engineering education and culture. He pointed out the fact that culture is not the property of the Greek and Latin student alone. That person, regardless of education, who is able to evaluate personality, human behavior, environment and all problems, without bias, has culture.

Gardner C. George, President of Albany Chapter, took occasion to present honorary membership and insignia in behalf of his chapter on three distinguished guests. These were Arthur W. Brandt, N. Y. State Superintendent of Public Works; Harvey O. Schermerhorn, N. Y. State Commissioner of Highways; and Guy W. Pinck, Commissioner of Canals.

Royal G. Finch, Secretary of the State Board of Examiners, was adroitly introduced by the toastmaster as the "Grand Old Man." He indulged in a series of reminiscences pertaining to the affairs of the State Department and its personnel. He extended his congratulations to the "Three Musketeers" just honored by the Albany Chapter.

The meeting was attended by engineers, many of whom traveled many miles to participate. Among local officers present were Gardner C. George, President of Albany County Chapter; Wm. B. Chadsey, President of Schenectady County Chapter; Sylvester J. Sullivan, President of Tri-County Chapter; and Carl W. Robbins, President of Rensselaer County Chapter.

Earl D. Landfear
Secretary of Rensselaer County Chapter

THE ALBANY COUNTY CHAPTER

Professor Charles M. Allen of the Worcester Polytechnic Institute Holds Audience of Eighty Engineers Spellbound

In a series of ingenious and startling experiments, interspersed with humorous anecdotes and choice bits of philosophy, Professor Allen, guest speaker of the Albany County Chapter at its annual meeting in May, demonstrated the mysterious behavior of explosive vapors.

Professor Allen is widely known as a consultant in hydraulic engineering. He has been awarded prizes and medals for outstanding work in the field of experimental research, and some of his work has received international recognition. Professor Allen is a past president of the Boston Society of Civil Engineers, past vice president of the American Society of Mechanical Engineers, and a prominent member in two honorary societies, and other engineering and scientific bodies.

The Worcester Polytechnic Institute Alumni Association of the Capitol Area joined the Albany Chapter in honoring Professor Allen at an informal dinner preceding the meeting.

During the business session, presided over by Gardner C. George, retiring president, a special tribute was paid to the late Colonel Frederick Stuart Greene, Supt. of New York State Department of Public Works, and an honorary member of the Albany County Chapter.

Following this, a memorial tribute was paid to Friend P. Williams, John D. Myton and Frederick W. Caldwell.

Walter C. Benedict, retiring Secretary-Treasurer, in his annual report, emphasized the healthy financial condition of the Chapter.

John L. Harvey, in the report of Special Activities Committee, pointed to a comprehensive program of professional and social activities over a span of 16 months which has sustained the interest of Chapter members and won a commendable degree of public recognition.

Committee reports showing an active interest in the Chapter, and in the engineering profession, were presented by,
Edward E. Sheldon on Practice,
George L. Rogers on Candidates for License,
Ralph A. Bloomsburg on Publicity,
Herman F. Lane on Legislature,
Forrest J. Chapin on Membership,
William J. Blaun on Year Book Publication,
Joseph T. Freeman on Tri-County Coordination.

New officers elected at this meeting were: President, Louis C. Hyatt, Works Manager, Consolidated Car Heating Company; Vice-President, Clarence W. Post Chief Engineer, W. P. A.; Secretary-Treasurer, John A. O'Donnell, Senior Civil Engineer, New York State Department of Public Works; Directors, Cotter J. Nash, Supervisor of Construction Methods, New York Telephone Company; John L. Harvey, Supt. of Power Control, New York Power and Light Corporation.

The concluding features of the business session were the installation of the new officers, and a brief address by Alfred E. Roche, President of the New York State Society of Professional Engineers, extending warm greetings to Professor Allen and to the new officers of the Albany Chapter.

Following the meeting a buffet luncheon was served at which many new social contacts were made, and many old ones renewed. Songs were sung, yarns were spun, and as a final tribute to Professor Allen, the Worcester Alumni put on a rousing Tech song and cheer.

JOHN L. HARVEY.

At the meeting of the New York State Board of Examiners of Professional Engineers and Land Surveyors held in April, it was voted to recommend the granting of license to the following 164 applicants:

[* Land Surveyor only.]

Adelson, Irving
8916 120th St.
Richmond Hill

Aivazian, Harry
61 W. 85th St., N. Y.

Almoian, Nerses A.
540 Audubon Ave.

Anderson, Lester F.
111 No. Walnut St.
East Orange, N. J.

Balint, John J.
Hoover Rd., Yonkers

Banker, John J.
c/o Babcock & Wilcox Co.
19 Rector St.

Barbour, Fenner S.
1 Prospect Terr.
East Orange, N. J.

Bartlett, John T.
64 Overlook Rd.
Upper Montclair, N. J.

Becker, Morris
279 Ocean Pkwy.
Brooklyn

Beggs, Joseph S.
129 Willis Ave.
Rochester

Bidwell, Milton H.
65 W. Sunrise Hgwy.
Freeport

Bildstein, Alfred G.
135 Christie St.
Leonia, N. J.

Billman, Leroy S.
284 Hancock St.
Brooklyn

Binner, C. Randolph
73 Surrey Lane, Hempstead

Borgia, Antonio
2089 Creston Ave., Bronx

Brand, George S.
31 31st St.
No. Bergen, N. J.

Brinkman, Gerad J.
2680 Heath Ave., Bronx

Broderick, Edward J., Jr.
7 Platt Ave., Leroy, N. Y.

Browne, Robert D.
King St., Chappagua

Brumbaugh, John E.
98 Willow Ave., Larchmont

Caggiano, Nicholas A.
582 5th St., Brooklyn

Camp, Cecil S.
737 Lancaster Ave., Syracuse

Carlton, John G.
33 Colton Dr., Buffalo

Carr, deElton J.
Tuxill Ave., R. D. No. 1
Corning

Chellson, Harry C.
330 W. 42nd St.
Engr. & Mining Jol.

Codding, Elias H.
26 Bethune St., New York

Cohen, Benjamin C.
30-02 Murray St.
Flushing, L. I.

Cole, Clinton B.
Rochester Gas & Elec. Corp.
89 E. Ave., Rochester

Coombs, John H.
Towners, N. Y.

Corradi, Peter
245 Martine Ave.
White Plains

Corwin, Cyril J.
9420 117th St.
Richmond Hill, L. I.

Cruikshank, John E.
100-20 205th St.
Hollis, L. I.

Daniels, Daniel V.
3115 Broadway, New York

deChabert, Alfred A.
Apt. No. 45, 3495 Broadway, N. Y.

Dedrick, Floyd F.
280 Knollwood Rd.
White Plains

Degen, Gerald D.
167-10 Crocheron Ave.
Flushing, L. I.

Dickinson, Willard H.
105 Haven Ave., 5-D, N. Y.

Donohue, Joseph B.
1522 Putnam Ave., Brooklyn

Drucker, Joseph J.
7148 Juno St., Forest Hills

Druding, Henry A.
54 No. 17th St.
East Orange, N. J.

*Duncan, Edwin A.
2034 E. 26th St.
Brooklyn

Eckhardt, Floyd S.
Stevens Rd., Hamburg, N. Y.

Eichhorn, Charles W.
6 Everett Pl.
Grantwood, N. J.

Engelfried, George C.
108-28 39th Ave.
Corona, L. I.

Espig, Edwin E.
284 Nassau Ave.
Kenmore

Feinson, Samuel H.
998 Carroll St.
Brooklyn

Fiala, Anthony, Jr.
148 83rd St., Brooklyn

Filardi, Frank J.
4915 Broadway, New York

Fitz, Otis R.
38-16 208th St.
Bayside

*Fitzgerald, Norman E.
2335 Valentine Ave., Bronx

Fremouw, Gerrit D.
322 Vienna St., Newark, N. J.

Gerringer, Samuel
c/o Dep. of Pub. Works
54 Lafayette St.

Gierasch, Alden R.
3025 Porter St., N. W.
Washington, D. C.

Gold, Samuel
1750 Montgomery Ave.
Bronx

Goldsmith, Philip
589 Flatbush Ave., Brooklyn

Goodrich, Edward N.
R. D. No. 2, Watervliet

Gordon, Isidor
241 Henry St., New York

Grace, Francis J.
174 W. 65th St., New York

Graham, Harry E.
289 Spring St., Trenton, N. J.

Groopman, Abraham
661 Beck St., Bronx

Gunn, Donald A.
Remington Rand, Inc.
Tonawanda, N. Y.

Halpin, Robert B.
5 Pine St., Waterford

Hanstein, Henry B.
College of the City of New York

Harrison, Percy B.
1718 Grand Ave., Bronx

Hayes, Harold D.
R. F. D. No. 1, White Plains

Henkel, George E.
8008 Austin St.
Kew Gardens

Henrichsen, Christian B.
34 Highland Ave.
Port Washington

Hoffman, George M., Jr.
9 East 9th St., New York

Honigman, Elkono
1339 Intervale Ave., Bronx

Horton, Elwood
52 Wall St., New York

Howard, J. Standley
137-20 175th St.
Springfield Gardens

Howe, Charles F.
3206 86th St.
Jackson Heights

Jaeger, Arthur F.
71 Hendrix St.
Brooklyn

Jochnowitz, Nathan
1185 Anderson Ave., Bronx

Johnson, J. Albert
4103 7th Ave., Brooklyn

Kern, Louis J.
4215 79th St.
Elmhurst, L. I.

Klahre, Alfred C.
10 Ocean Pkwy., Brooklyn

Kleinberger, Alfred
620 Ft. Washington Ave.
New York

Kovarsky, Louis
2285 Davidson Ave., Bronx

Kuraeff, Wm. A.
92 Haven Ave., New York

Lavo, Kenneth E.
Rm. 317-30 Church St., N. Y.

Lennon, Francis A
196 Warburton Ave.
Hastings

Lewin, Joseph D.
834 Riverside Dr., New York

Manfredo, Ido H.
8206 34th Ave.
Jackson Heights, N. Y.

Marks, Sidney M.
86 Grant Ave., White Plains

*Marshall, Wilmot N.
106 MacDonald St., Hempstead

Martin, James T.
275 E. Gunhill Rd., Bronx

Melamed, Frank A.
1425 University Ave., Bronx

Millonig, Henry, Jr.
103 Franklin St.
Kingston, N. Y.

*Minerva, Joseph P.
1400 Dean St.
Brooklyn

Moesel, Fred L.
P. O. Box 321, Peekskill

Moon, Arthur W.
56 Tompkins St.
Stapleton, S. I.

*Mortell, Frank
Ingersol St.
Huntington

Mosher, Harold A.
287 Wiona Blvd.
Rochester

Myers, Henry G.
101 Page Rd.
Valley Stream

Nordquist, Joseph E.
57-22 161 St.
Flushing, L. I.

O'Keefe, Keith T.
155 West 188th St.

Oler, Charles B.
289 Convent Ave., New York

Owens, Robert M.
62 Elton St.
Brooklyn, N. Y.

Pabst, Charles S.
8727 98th St.
Woodhaven, L. I.

Pearce, Freeman C.
208 Pearl St.
Buffalo

Pearson, Herbert
Vail Ave., East Quogue, N. Y.

Peterson, J. Milton
1054 Halsey St., Brooklyn

Philippi, George J.
458 54th St., Brooklyn

Phillips, Leonard R.
3229 Tibbett Ave., Bronx

Pietrunti, John P.
285 22nd St., Brooklyn

Pillitteri, John
2314 Fish Ave., Bronx

Quirin, Edward J.
48-02 43rd St., Woodside, L. I.

Rasch, Carl H.
1212 Holiver St.
No. Tonawanda, N. Y.

Reid, John H.
2617 Halperin St., New York

Reid, Lincoln
150 Claremont Ave., New York

Reis, John P.
18 Flint Ave.
Hempstead

Rieck, John J.
911 Amherst St., Buffalo

Riegel, Malcolm S.
15 Shoshone Ave., Buffalo

Ringwood, Nelson A.
934 Western Ave., Albany

Rudin, Arnold
35 Chestnut St., Brooklyn

Saari, John W.
Box 342, Kerhonkson, N. Y.

Sabatelli, Emil A.
1670 85th St., Brooklyn

Schill, Warren E.
51-16 Manila St., Elmhurst

Schmidt, Harry
233 Norwalk Ave.
Buffalo

*Schoppe, Monroe W.
207 Chapman Ave.
Bellmore, L. I.

Schroeder, Charles W.
42-43 147th St.
Flushing

Searles, Elwood F.
36 Hubbard Ave.
Red Bank, N. J.

Sethman, Martin W.
68 Middagh St., Brooklyn

Skinner, Merle C.
Winthrop

Sklar, Samuel E.
115 Pulaski St., Brooklyn

Smith, E. Dillon
270 Convent Ave., New York

Smith, Herrick A.
543 Decker Ave.
Elmira

Speller, Thomas H.
Bowen Rd., Elma, N. Y.

Steffan, Christian H.
8010 78th Ave.
Glendale, L. I.

Strock, Clifford
8215 Britton Ave.
Elmhurst, L. I.

Sturm, George W.
156 North St., Jersey City

Suter, Henry P.
210 Waldo Ave., Englewood

Tanielian, Megurdich
75 Halsey St., Brooklyn

Tchernowitz, Jack K.
37 Overlook Terr., New York

Terwilliger, Hal R.
920 Amherst St., Buffalo

Thompson, George J.
143-12 Oak Ave., Flushing

Treat, Herbert R.
41-48 Parsons Blvd.
Flushing

Tullar, Irving
34-15 94th St.
Jackson Heights

Urheim, Alf
39 Cloverdale Ave.
Great Kills, S. I.

Wacker, Lewis D.
143 Victoria Blvd., Kenmore

Waidelich, Alfred T.
90-31 Whitney Ave., Elmhurst

Walke, Richard G.
6211 Broadway, Bronx

Way, Ernest N., Jr.
470 W. 24th St., Apt. 12 J.

Weisselberg, A.
144 Paulin Ave., Leonia, N. J.

Whittaker, Frank C.
102 W. 130th St., New York

Wilson, Carl F.
124 E. 3rd St., Corning

*Wirth, Carl E.
163 Jackson St. Hempstead

Wise, Milton A.
81 Pearsall Ave., Freeport

Wisloff, Harold
155 89th St., Brooklyn

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51 Highland Ave., Hamburg

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3563 88th St.
Jackson Heights

CONVENTION COMMITTEE

The Convention Committee in charge of the 12th annual convention of the New York State Society of Professional Engineers Inc. included the following:

CHARLES W. BURKE, *Chairman*
ALFRED E. ROCHE, *Ex-officio*
ARTHUR V. SHERIDAN, *Ex-officio*
JOHN C. RIEDEL, *Ex-officio*
JOSEPH A. BRADY
IGNATIUS W. CONWAY
GEORGE A. DORFMAN
JAMES F. FAIRMAN
BEN H. KREY
FRED W. MALKMUS
GEORGE A. SALLANS
RAYMOND C. SULLIVAN
FREDERICK VAN OLINDA
FRED. WACKENHUT
JOSEPH J. WELSH
FREDERICK H. ZURMUHLEN

TEXAS

TRAVIS CHAPTER

The Travis Chapter of the Texas Society of Professional Engineers found the formula for the most successful meeting of the 1939 season, when they entertained their ladies at the first quarterly dinner in May at the Stephen F. Austin Hotel in Austin.

One hundred and forty-three members and guests attended the dinner and entertainment, which was followed by a theater party.

President Walter E. Seaholm introduced Engineer T. B. Warden as toastmaster for the evening, who, in turn, introduced the distinguished guests and their ladies. Engineer Fred E. Rightor, president of the Texas Society, welcomed the ladies, in behalf of the Travis Chapter and very ably acknowledged the debt which every engineer owes to the lady who stands at his side.

Lawyers Attack Illegal Practice of Law

ONEIDA, N. Y.—Moving to stop the practice of peace justices and insurancemen performing legal duties in surrogate's and other courts, Harrison W. Coley, president of the Madison County Bar Association, announced the appointment Thursday of a committee to check such alleged practices in the courts of the county.

Terming the activities of these laymen "unauthorized practice of law," Coley said "from my observation most of these acts occurring in Madison county have been in the surrogate's court. The objectionable practices include signing and obtaining papers and deeds of legal tenure."

Martin E. Angelino of Oneida, clerk of surrogate's court; Daniel F Flanagan of Cazenovia and Royal D. Woolsey of Canastota, district attorney, were named to the committee.

STATE REGISTRATION BOARD TO MEET IN DETROIT

The Michigan State Board of Registration for Architects, Professional Engineers and Land Surveyors will hold its next meeting in Detroit. Some time ago the Architects, Professional Engineers and Land Surveyors Committee on Registration suggested the possibility of meeting with the board to discuss certain matters and this meeting is being held for that purpose.

One of the items to be considered has to do with a type of examination which will determine the applicant's *qualifications as to character, judgment, experience, reliability and accomplishments rather than his ability to perform highly technical calculations.*

NEW YORK STATE BOARD OF EXAMINERS

The 193d meeting of the N. Y. State Board of Examiners of Professional Engineers was held at New York City on May 12, 1939. Of a total of 180 applications considered (including 15 oral interviews), 18 were held for further consideration, 78 were scheduled for written examinations, 53 were rejected, and 31 were approved for license.

THE MAN WE DON'T KNOW

(Continued from page 14)

combustion engine possible, it could have flown. He also designed a tank and a submarine but refused to develop them because he said they were too dangerous.

Every thing that can be done has already been done. Nonsense. We do not even know what electricity is. We cannot take a blade of grass and do with it what a cow does. We know nothing of chemistry.

Let business say to the world:

"There are too many people who never use checks, who have no telephones, no bath tubs, no electric lights, no refrigerators, no radios, no automobiles, no new homes, no decent furniture, have never taken a trip, have never had an education, have never seen a good show, nor listened to a symphony. Let business say that because it is a fact. And the only way to supply these millions with such interesting conveniences and cultural opportunities is for somebody to get busy and produce them. When it is done, it will be done by business men who, for some strange reason are the only people among us who understand the manner of taking natural resources and turning them into the kind of wealth men need and must have. Scholars are only recorders. We sit back and tell about it or criticize it, but the business men have created the wealth that supports the civilizations of the world.

Now, young men, I want to leave one more thought with you. Never for one moment deny the existence of an Almighty God. Some of us may be prone to do this, but the moment we do, we are due for a fall. Don't talk about it too flippantly because without the assistance of an Almighty God neither you nor I nor any of us could hope to do anything, but sit and think and perhaps mostly sit; and another thing, in this troubled world of ours watch your "isms", irrespective what that "ism" represents. Outside of Christianity, there are too many "isms" that have no place in the American scheme of things. You know the devil once, scripture tells, on one occasion took the master up into a high mountain and pointing downward to the busy glamorous world below, he said, "All this will I give thee if kneeling down thou wilt adore me."

It is natural to paraphrase the Biblical story into modern language. Today the communist takes the Christian up into the mountain of Utopia and catching him in a hungry moment he points downward to the world basking in the sunlight of achievement.

"This kingdom", he says, "and the wealth thereof is yours if falling down you will adore me. The capitalist system has made slaves out of you; the din of machinery has deafened you to the consciousness of your dignity. The capitalist has stripped you of your manhood, robbed of you of your name and given you instead a number on a silver badge. You have asked for bread and they have given you stone. Follow me and the valleys of injustice and pinching poverty will be filled, and the mountains of greed and despotism will be leveled and Lazarus will drive the over-fed dives from his banquet table. Be not lulled to sleep by the soft potent lullabies of religion which feed a man prayers and pious platitudes, when his stomach cries out for bread. Reject your God who was born in a stable and who feebly died upon a cross of shame, and follow leaders who will lead you into the promised land."

But the Christian answers, "The Lord thy God shalt thou adore and Him alone shalt thou serve. Not by bread alone doth man live. You offer man a philosophy which would make him eventually worse than he is. You cannot make men happy, in this life or in the next by persuading them to relinquish the adoration of God and bow in adoration to a Golden Calf. Your economic system is as rotten with injustice and greed as the system you would destroy with fire and sword. By your fruits we know you. Russia with its squalor and vice, poverty and despotism is a truer picture of hell than of the Heaven you promise."

Deprive a man of his God and he will set up one of *his own* which usually becomes the tyrannical state, and tyranny has no place in America. So whether one subscribes to Christianity through Lutheranism, Presbyterian, Baptist, Catholic, or whatnot, the only thing that matters is, does he subscribe at all? We will have to forget the

old animosities and prejudices brought over from other generations in which we were too prone to jump at another man's faith because he did not say his prayers our way. The only important thing now is not how he says his prayers but whether he says them at all.

I once knew a man who was an atheist, or who pretended to be. I doubt if he was. I have heard him argue long and loud with my father because of his leanings toward the Christian faith. The most logical answer I have ever heard was made by my father to this man. His reply was this, "Well, Jim, I am going to agree with you for once. It may be true, as you say, that there is no God; and if that be true, then I'll be all right. But, if it be not true, you will be in a 'hell of a fix'."

The "isms" of today are striving to wipe out Christianity; but, boys, you have but one thing to remember and remember it well, that Christianity is the one institution on earth that has come down through the centuries of time and has survived although all types of "isms" have crossed her path. Christianity is the one institution that can look down the vanished centuries of time and there gaze upon the memorials of man's uplifting struggle and say with truth, "These are mine." From the days when she emerged from the catacombs down to the hour that the blighting shadow of communism crossed her pathway, she has been the one influence in all the world that conquered the passion of men in the one hand and the ambition of princes and kings and potentates on the other. She it was that found the Roman world two thrids slave and made it free. She it was that found woman the victim of man's beastility and made her man's companion through the sacrament of holy matrimony. She it was that spread institutions of learning over the face of the known world and rescued man from the thraldom of ignorance and superstition. She it was that saved ancient learning from the ruthless hands of the barbarians and preserved it for your and my enlightenment today. All that is pure; all that is holy; all that is worthwhile in the human life today, may be traced to the teachings which she ground into the very souls of men, from the days of Pentecost, down to the very hour in which you live. And as she has been in the past so she is today; look around you and about you and read the story of your country's life in current literature, and you will find that she, and she alone, has stood as a wall of adamant against the ruthless desecration of God's holy laws by the pagan philosophies of the hour.

THE PROFESSION OF ENGINEERING

(Continued from page 9)

growth of new professions will not mean the degradation of the old, but merely that the plane of living and understanding is to be raised for a larger and large percentage of the people. We may be able to comprehend a constantly growing public need for more and more professional and specialized services, and be able to welcome newcomers to the expanding but still charmed circle. Since it seems impossible to turn back the clock; since it seems certain that people will not revert to the simple living of their non-professional ancestors, the multiplication of professional groups seems inevitable. How we shall look at the development, or what we should do about it, I cannot presume to advise, being a member of any profession only in the Pickwickian sense.

The process by which engineering became a profession is not difficult to understand. Of course there are remarkable engineering works of great antiquity. Equally, of course, the roads of ancient Rome were a vital element in the spread of empire. But the nineteenth and twentieth centuries created the engineering profession in the sense of my definition. When human life and safety came to depend upon the minute accuracy of complicated calculations, when it was no longer safe to rely upon trial and error, when the rule of thumb gave way to the slide rule, the professional engineer came into his own. Then he had to have an unusual store of scientific knowledge, supported by experiences not available to the general run of people. He had to become a technical specialist, trained at first through carefully supervised apprenticeship, and later by long-sustained supervised study. The relatively sudden public need of the profession created it. You who listen to me know better than I of the constantly accelerating progress that the profession has made in every decade for the past half century.

The profession has been created not by laws, by schools, or by state departments of education, but by the growth of an imperative social need. The profession in the future will march with the evolution of that social need. In that sense, the profession has nothing to fear. Unless mankind goes mad, and demands that the engineer use his talents to bring about the suicide of our civilization in a general war, there can be no doubt of the constant expansion of the professional services of the engineer. The responsibilities of the engineer will become more exacting and more significant in the daily lives of all of us. That must mean a progressive rigorousness in the requirements for acceptance to membership in the profession. The watchword of this, as of every other profession, should be competence. Today, in this state, entrance into the engineering profesison is, almost without exception, by examination. The Board of Examiners has accomplished a signal service in devising and administering examinations which at the same time deal fairly with every candidate and protect the profession and the public from the more flagrant and dangerous forms of incompetence. However, the limits of tolerance in this field, as in machine design, are bound to be made progressively narrower. It is encouraging to know that the Board is constantly studying this important problem. I am certain that there will be developed, not only more rigorous and more searching examinations, but examinations that will more accurately differentiate between the competent and the incompetent.

This is not to intimate that I think there should be an arbitrary limitation or reduction in the numbers who are admitted to the profession. I do not believe that there are now or will be in the near future too many good engineers. And I certainly do not believe that the numbers of new entrants should be limited in the protection of the assumed interests of all, regardless of competence, who now wear the badge of the profession. The moment a profession disregards the public interest in the effort to protect its least compentent members it ceases to be a profession and becomes a trade union of the less desirable type. Rather should there be for all who show promise encouragement to make the effort of preparation, to the end that their potentially expert services should be available to the public. In this endeavor the schools of engineering have their large part. Whether they should produce more or fewer engineering graduates will depend upon the progress of our civilization. My guess is that there will be room for more. But that, whatever the number, they must be progressively and continuously better is not a matter of doubt. It is an unquestioned fact.

I have spoken of the significance of the qualifications for admission to the profession as tested by examination. I fear that there is one element that enters into professional competence that cannot be identified by any examination procedure, however skillfully constructed. I think there is such a thing as a professional attitude. If there is, it cannot be taught. It is a contagion and must be caught. This contagion can be found nowhere save in the profession itself. The dictionary definition of a profession was unsatisfactory, but there was one word in it that should be in the forefront of our thought. A profession is an "occupation . . . to which one *devotes* oneself." The idea of devotion, while not confined to professional life, is necessarily an integral part of it. It arises from a conviction of the social worth of the work to be done; it engenders the enthusiasm that endures hardships and creates miracles; it provides a satisfaction that is without price. The professional attitude—the attitude of devotion and consecration to one's job—thrives only in a professional atmosphere. It must be fostered by the sympathetic understanding and encouragement of one's fellows. It cannot be created by legislation or by precept. It must be palpably manifested in the lives and works of you who are of the profession, to be transmitted by you to those who enter as novices. That is your great responsibility. No one can say that you are not adequately meeting that responsibility. But eternal vigilance is the price of honor as well as of liberty. The ethics of society are constantly, though slowly, advancing. So must the ethics of the profession advance, and you are the agents of that progress.

The Regents of the University of the State of New York and the State Education Department have been proud to have been permitted to participate in the progressive steps that have brought the profession of engineering to its present high estate in New York. It is their hope that they may be allowed to share in your future triumphs. For myself, my predecessors have led the way and made the path easy. I have only to follow the course they have marked out.

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